The Builder.

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ILLUSTRATIONS.

Spandrel, Mendresseh College, Ispahan; Spandrel, Cairo 216
Tomb of the Princess Margaret, Lincluden Abbey. Date about 1440 218
Design for Proposed New Church, Edingley, near Southwell, Notts.—Mr. John Cottingham, Architect 220
The Newly-constructed Portion of the Façade at Santa Maria del Fiore, Florence (Double-Page Engraving).—Prof. De Fabris, Architect..... 222, 223
St. George's Church, Preston.—Messrs. Garlick, Park, & Sykes, Architects 225
Entrance to Finsbury Hospital.—Mr. J. D. Sedding, Architect 227
Filling-in and Border.—Designed by Geo. C. Haité 229

CONTENTS.

Danger from Lightning and how to Escape it 205
Art and Art 206
The "Architectural History of the City of Rome" 207
Sherborne Abbey Church 208
On Things Curable 210
Professional Portraits 211
The Last of Old Carey Street 212
The Working of the Public Health Act 213
Some Recent Foreign Work on Hygiene 213
Sir Robert Rawlinson 214
Saracenic Design 214
The Tomb of the Princess Margaret, Lincluden Abbey, Dumfries 231
Proposed Edingley Church 231
Florence Cathedral and its New Façade 231
St. George's Church, Preston 231
Wrought-iron Screen, Leonard-square 231
Surface Decoration 231
The Berlin Gallery of Sculpture 231
Discovery of Roman Remains at Mainz 232
Edinburgh 232
The Manchester Ship Canal 232
The Tolhouse, Great Yarmouth 232
Competition for Mural Paintings at Dusseldorf 232
Foreign Competitions 232
The Artisans' Dwellings Act: Its Cost and Value 232
The Liebig Monument 233
The North and East Suburban Industrial Dwellings Company: Over-building and Reduced Rents 233
Priddy, near Wells, Somerset 233
Parliamentary Jottings 233
The Art-Union of London 233
Provincial News 234
Old Plastering 234
Sub-Contracts 234
Proposed Waterworks at Bungay 234
Bad Building at Highgate 234
Books: Moncel's "Electric Lighting" (Routledge); Holmes's "Practical Electric Lighting" (Spon); Ware's "Modern Perspective" (Trübner); Burnham's "Limestones and Marbles" (Trübner); "Sussex Archæological Collections" (Wolff); Hutchinson's "Girder-making and Bridge-building in Wrought Iron" (Spon); "Our Iron Roads" (Bemrose) 234
Variorum 235
Miscellanea 235

Danger from Lightning, and how to Escape it.

GOOD advice, in order to be of practical use, should be such as has some probability of being followed. Indeed, sensible persons may not be deterred from adopting a line of conduct known to be conducive to their safety or their interest by the consideration that it is unpleasant, any more than they would reject the prescription of an eminent physician on account of its disagreeable taste. But children, and not a few grown-up children, find abundant reasons for so rejecting the nauseous potion. The promise of future good has less influence with most of us than the menace of immediate disgust. Thus, when we find in the daily press a writer, of whose work on the action of lightning we had occasion to speak in very high terms on its first appearance, come forward to give this advice to the public as to their conduct in thunder-storms, we cannot entertain much expectation that it will be followed. "Shelter of all kinds must be most carefully avoided. The shelter afforded by trees, hedges, banks, hayricks, walls, porches or doors of houses, cliffs and sheds, is all equally deadly. . . . A wooden building is more dangerous than most persons imagine. A wholly wooden house is more dangerous than a wholly metal one, on account of the absence in the former of the elements in the latter tending to electric leakage."

Under these conditions of universal danger the advice given to rustics when a thunder-storm comes near is that "they should on no account move, but, careless of the rain, they should lie flat on their faces on the ground till the clouds have passed over them. . . . What signifies a wetting on a summer's day to a hardy labourer?"

Now, supposing this advice to be sound, and that the certain danger of rheumatism or dysentery is worth encountering for the sake of the uncertain avoidance of the danger due to some four or five feet elevation towards the thundercloud, is there any probability that it will be followed? Does not a man diminish his claims to attention by riding his hobby so hard as this? We may fully agree with the writer that "Government should for a few years scientifically investigate and minutely record every instance of fatal or destructive thunderbolts that should occur during that time in the United Kingdom." That there is the remotest chance of this being done we suppose few people who have had the misfortune to propose improvements to the administration will for a moment admit. Still, it can do no harm to make such a statement. "The regular inspection of lightning-conductors," as Mr. R. Anderson wrote in 1879 ("Lightning Conductors, their History, Nature, and Mode of Application," p. 222. London: Spon), "as yet unknown, or all but unknown in England, has been for a long time in practice in several states of Continental Europe, among them Germany and France." In Schleswig-Holstein a special commissioner was appointed to investigate the question whether buildings provided with proper conductors could even be struck by lightning. The results obtained by the gentleman chosen to undertake this task, Dr. Wm. Holtz, of Greifswald, were directly opposed to the theory of Colonel Parnell, who is an opponent of lightning-conductors. As to this, we think it impossible to doubt that the Schleswig-Holstein experience is only confirmatory of the great body of evidence to which Mr. Anderson calls attention, to the effect of the essential utility of the lightning-conductors, when properly constructed and maintained. We may leave the advice to people to prostrate themselves, like *Trinculo* in the "Tempest," on the approach of a threatening cloud, to take its chance. "There's neither bush nor shrub to bear off any weather at all, and another storm brewing. I hear it sing in the wind," may be cited in proof of the support that Shakspeare would have given to the advice to lie down to be rained upon. "If it should thunder as it did before, I know not where to hide my head; yond' same cloud cannot choose but fall by pailfuls." As to that, we may leave it to those who may be in the like predicament to make their own choice. But in the interest of the builders, of the ancient buildings of the country, and of the urban population, indeed we may say of the whole population, we feel bound to protest when a scientific man writes in depreciation of lightning-conductors. This elegant application of the great discovery of the identity of the lightning with the electric fluid had first to overcome the opposition of those who thought it was impious thus to attempt to divert the vengeance of the thunderbolt. It has still to overcome the dull, unyielding opposition of ignorance, indifference, neglect, and penny-wise and pound-foolish parsimony. But it is no less than disastrous to find the ranks of these congenial opponents to sound measures of precaution reinforced by men who may claim no superficial acquaintance with the theory of electricity We cannot, however, but think that a responsibility of no ordinary kind attends on any effort to discourage the application of lightning-conductors.

There is no doubt that one or two very fierce thunder-storms, as well as the unsettled weather which has prevailed in England since last St. Swithin's Day, have directed public attention to the means of ensuring, so far as possible, safety from lightning. And it is well for those who are better informed than the generality of their neighbours in the matter to give the world the benefit of their experience. The warning, for instance, not to take shelter under a lofty tree in a thunder-storm is a very sound one, although it may be added that there appears to be a specific difference, in this matter, in the behaviour of different kinds of trees. Thus it is said that thunderbolts never strike the laurel, or, it is added, the alder. On the other hand the elm is signally unsafe, not only from the attraction due to its height, but also from the manner in which its branches break off short, without warning. But we do not think that, to say nothing of the certain evil of a drenching rain being poured on a prostrate form, for electric reasons alone the advice to lie down in the open field is good. The electric fluid, as far as we know, seems to be far more affected by the superficies than by the mass of a conductor. The difference of 4 or 5 ft., when added to the 3,000, 4,000 or more feet that the thunder-cloud is distant from the earth, is so small as to be almost inappreciable in its attractive influence. On the other hand, the difference between the area directly opposed to the cloud by the erect and by the prostrate human figure is three or four times against the latter. We should, therefore, be inclined to hold, that on an open plain, in a heavy thunder-storm, very near the surface of the earth, a prostrate man would be in much greater danger of being struck by the fluid than a man who was standing or walking. This is a matter of opinion, and it may not be very easy to put it to the test. It is, however, worth consideration before following the advice to lie down.

But with regard to the recommendation to prefer the open downpour of rain to taking shelter in a porch or doorway, this comes within the province of the protection of buildings. If the building be safe, the people taking shelter in it will be safe also. As to the process of making buildings safe, we are not among those who hold that there is any doubt whatever. The rules of protecting buildings by conductors are known, and we are not aware of a single instance of serious damage when these rules have been faithfully carried out. Persons will do far better to inquire whether their buildings are in a state of proper electrical safety, than by endeavouring to ensure personal immunity from thunderbolt at the risk of an attack of dysentery.

ART AND ART.

Although the use of such an expression as "the fine arts" betokens the admission of the fact that there is a branch or division of art which is other than fine, we question whether the essential distinction between the two very opposed methods which are employed by different classes of artists has been hitherto as fully illustrated as its importance demands. We instinctively feel the difference between a portrait and a machine. But the last half century has witnessed, what the masters of Grecian or of Italian art would have called incredible, the production of accurate portraiture by purely mechanical means; that is to say, by the pencil of the sun, unaided by the hand of the sculptor or of the painter. What, then, is the essential distinction between fine art and art that is not called fine?

Essentially, we take it, the distinction is one of method. It is true that one method is most usually applied to one, and the other to the second, of the two vast provinces of art to which we refer. But the example which we have cited of the use of the camera to produce portraits is only one of those which may be adduced to show that it is rather in the nature of the method employed, than in that of the object to which either method is applied, that the essential difference exists.

Such, indeed, is found to be the case in what we may call the most rudimentary form of art, that of the draughtsman. There are, as every student knows, two very distinct methods of drawing, viz., that which is called by the appropriate name of "freehand," and that which is known as mechanical. So distinct are these methods, that a procedure which is essential in the one of them is inadmissible in the other. Thus it is of the essence of mechanical drawing that every dimension should be accurately measured; and, not only so, but that it should be twice measured,—once to ascertain its numeric value, and again, either in full size or on a reduced scale, on being committed to paper in the form of a drawing. But any such measurement will be discouraged and as far as possible prevented by the freehand drawing-master. He holds it to be illegitimate, and is of opinion that its adoption would tend to cramp, stiffen, and render altogether inferior the handiwork of the student who should have recourse to it. Even in marking out the main points in a landscape, the use of the pencil, held at arm's length between the eye and the scene, and that of the thumb-nail to mark the apparent distances where certain lines cut on the pencil, is thought to be barely allowable.

We may go a step further in this direction and appeal to the experience of the student. It is always hazardous to draw general conclusions from particular instances, so that we must limit ourselves to the observation that, as far as our own experience goes, the practice of either one of these methods is somewhat hostile to excellence in the other. We are far from saying that this is always the case; in fact, in the case of those artists who are confessedly the most free-handed draughtsmen in the world,—the Japanese,—we find combined the utmost freedom of touch and the greatest accuracy of mechanical detail and finish. But we do not know that these two excellences are developed in the same individual. In the illustrated books on Japan and Japanese art, to some of which we have from time to time called the attention of our readers, we have found much as to the former branch of Japanese draughtsmanship. The paper, we are told, is never laid on the desk. It is held in the air, in the left hand, and the design is dashed in by a brush held in the right hand. As to the use of this method there is no doubt. We have minute accounts of the process from more than one witness, and the wonderful freedom of many of the Japanese designs is in exact accordance with the method described. We know of but little in art to which this graceful freedom of touch can be compared, except in what is called the Raffaelle ware. In that case necessity was the mother of invention; as the touch on a wet clay surface must, in order to produce anything but a smudge, be as sharp and certain as that on the bibulous paper of Japan.

But then it must not be forgotten that side by side with these freaks of free-hand drawing are found geometric designs of the greatest delicacy and intricacy, designs such as can only be produced by instruments having all the precision of the compass and the drawing-pen. Of the method of producing these designs and of the instruments used by the draughtsmen we have no account in either of those important works on Japan that have lately come to our notice. But we think it very questionable whether the great artist who can give flight to the cranes and almost everything except movement and fragrance to the flowers which he throws on paper or on lacquer, is the same as the artist who produces these exquisitely delicate intersecting circles and straight lines.

However that may be, our own experience is rather to the effect that excellence in the two departments is but rarely to be found displayed by the same hand. Nay more, when such is the case, we think that the more general, is attained at the cost of the more special, excellence. There may, of course, be exceptions. It may be that the use of the scale and the straight edge will give, in some cases, a firmer touch to the draughtsman of the living form. But our own experience points in the other direction. And we think that, as a general rule, that man will attain the highest excellence, in either bold sketching or accurate drawing, who confines his labour to that one branch in which his genius finds most ease in the manipulation.

If this, as we cannot doubt, be the case in drawing, no less is it the case in sculpture, or in any of those branches of art which mould refractory materials into form. In metal, in wood, in stone, as well as on paper, we find the application of the two methods to be equally convenient, according to the object sought. Do we seek for a portrait bust or cameo in marble? That which comes to the hands of the purchaser is mainly a mechanical product, copied by purely mechanical means, from the clay on which the artist impressed his thoughts. The fact that the last touches may be given to the marble by the chisel does not interfere with the other fact, that the greater part of the work done on that marble is purely mechanical. So, again, with regard to that development of the art of the sculptor, which reached a high excellence before Phidias opened the quarries of Pentelicus,—statuary in bronze,—there was combined, first, the free master touch on the damp clay or the yielding wax, and then the accurate mechanical work of the moulder and caster. Most of this priceless work has turned to dust. But enough remains to show what the bronze work of the highest time of Greek art really was. The writer of these lines, in company, a few months ago, with one of those officials of the British Museum to whom art in England owes so much, ventured to express the opinion that the bronze mask, which is called variously a Venus or a Hypnos, and is said to have been dug up in Epirus, was the finest thing in the British Museum. "In the Museum?" replied Mr. N.; "I should say, the finest thing known in the world." Yet the work in question, while embodying the result of the highest genius of the sculptor, was,—as it now exists,—the work, we take it, of the mechanic, or, at all events, of the sculptor who was proficient in the mechanical branch of art.

Our attention has been riveted on this question of the opposed methods of art, in consequence of the examination of some very exquisite models which were displayed at the Engineering Exhibition, of which we gave a summary account on the 14th ult. (p. 61, *ante*), as exhibits of working men. In some of these the artist, for such he must worthily be called, had been careful to represent every part (as in the model of a yacht) in the actual material of which it is constructed in the real vessel. In one of the most beautiful of the models, however, the whole was constructed of steel. We must remember that this refractory material was one of the noblest employed by the great Italian sculptor; or, rather, that its extreme hardness and fine texture led to its being raised to the rank of a noble metal by the exquisite work of their chisels. The modeller, indeed, enjoyed advantages denied to the sculptor, in steel, as plates may be rolled and bars forged, for his use of the exact dimensions that he may require. But, all said and done, a point in the work arrives where the two artists work very much alongside of one another, and where hammer and chisel have to be employed by each to hew this enduring metal into the required form.

Yet even here, brought, as it were, side by side in the use of the same implements on the same material, the methods of the two art-workmen differ in their essence. To the one the straight-edge, the callipers, and the scale form necessary adjuncts to the chisel, and the file is no less useful to him than the sharper tool. To the other, these instruments are abominations. The file, indeed, as we know to our cost, was used by Bernini upon marble, and that marble one of the finest relics of Roman reproduction of Greek art. That he would have used it on steel or on bronze there can be no doubt; but the effect sought and produced by the use of the tools we have mentioned is that of flatness and sharp angularity. All the surfaces are plane, or, if curved, are level and broad in their curvature. All the angles are right angles, or, if not, are as distinctly fixed in their trigonometric measure as if they were right angles. All the holes are round, exactly fitted by the pins or bolts which they were pierced to admit. The model, beautiful as it was, gave no idea of having grown, of having been a product of great creating nature. Every line of its surface betokened art, the art of the builder and of the smith.

In the flowers or masks cut by such a workman as Cellini in steel, or in any softer metal, all this is reversed. No surfaces are plane; no angles are trigonometrically perfect. Level smoothness, except as a foil to artistic work, is avoided. The ever-flowing curves of Nature are followed by the fancy of the sculptor; and it is by a succession of bold strokes, each of which leaves its own memorial in the metal, that the grand final result is attained.

This opposite style of treatment, moreover, is in many cases accentuated, not only by early study, but by hereditary training of the faculties. The great artists in the imaginative branches of art have usually betokened the bent of their genius in very tender years. The greatest excellence in mechanical art is attained among those sturdy and able mechanics who, according to the testimony of Mr. Nasmyth (in that charming autobiography which we reviewed on its publication), are the descendants of smiths and armourers who came over with William the Conqueror.

And thus, without forgetting that there exist specimens of old French work in steel which may rival the excellence of the famous Milanese armour, in which the fine and the mechanical craftsmen wrought together in noble emulation, we think that the English worker in metal, in the mechanical department, can fairly hold his own against the world. Not only could we point to individual productions, in support of this view, but can cite in testimony the perfection attained by those instruments which now cheaply, swiftly, and perfectly turn out work to replace that which was formerly costly, slow, and rough in its character. When Sir Joseph Whitworth shows us a pair of plates so smooth in their surface that they adhere to one another by atmospheric pressure, he gives us a measure of the perfection obtained by the human hand. It is with those splendid labour-saving machines which now plane and bore and shape iron and steel in our factories with the ease, and with far more than the accuracy, of wood work, as it is with the general problem of education according to the definition of a great French philosopher. To make one mind, often of inferior capacity, arrive, in a limited time, at the same point reached by the combined and successive efforts of a long series of master-minds, is the problem of education. To produce a machine which, cheaply and rapidly, shall give to iron and steel the forms, and the perfect finish, attained by the combined skill of a long series of able workmen, each devoting his life to the attainment of accuracy of finish, is the work of the tool maker. And thus in such a tool as a measuring-machine which will measure to the hundred-thousandth part of an inch, or of a shaping or planing machine that will produce any number of exact *fac-simile* copies of a given form, we have embodied the stored-up skill of generations of able workmen. The machine represents and reproduces the happiest efforts of their skill. But its excellence cannot be greater than that of the best of its makers.

When we see men trained from their early years to the use of the chisel, the hammer, and the file, and accustomed to the work and the direction of those wonderful appliances that now reduce to easy outcome the labour which had formerly to be effected by those implements alone, devoting their leisure and their money to the production of exquisite models of machinery, of carriages, of locomotives, or of ships,—working models in many cases,—we therefore hold that we are in presence of what is rightly to be regarded as a very high form of art. And

there is a remarkable contrast between such products of the working man's leisure as those to which we now refer, and a different class of the same exhibits to which, now some years ago, we called attention as displayed at the workmen's international exhibition.

In that display there were not a few exhibits which were not, in themselves, of the highest order of excellence, but which were yet of great interest as betokening the result of perseverance under unfavourable circumstances. There were, if we remember rightly, drawings or paintings executed by a rural postman, who had to walk so many miles a day, and who had had no regular training in art. Under such circumstances his work was not only creditable, but even wonderful, and it was painful to have to add that the qualities on which the judges in such an exhibition had to decide were exclusively those of the exhibits, and not those of the exhibitors. Again, there were some specimens of sculpture, also from the hands of amateur artists of the working class. And what most struck the careful observer in these objects was the resemblance that they offered to the corbels, and other features of sculptural church decoration of the thirteenth or fourteenth century. Any one who has himself learned to handle the chisel on wood or stone knows how this occurs. He knows how the idea is to a certain extent confined and modified in its reproduction by the nature of the material on which he works, and of the tools which he uses. He knows that there is a stage in his work at which it assumes a certain homogeneity,—a stage from which he has to learn that he must start afresh. But it is only the long-trained artist who has the courage for this fresh start. Thus the amateur, be he a working man or not, is pretty sure not to go beyond the excellence that was attained, centuries ago, by those early artists who had not gone beyond a certain stage in the progress either of their own skill or of the perfection of their art.

This arrest of development, in the application of amateur labour to fine art, contrasts in the most pointed manner with the result of the application of the labour of the experienced mechanist to produce some triumph of his craft. We hardly like to speak of such things as "amateur work!" That, no doubt, they are, in a sense,—in the sense of being work done for the very love of the workmanship. But they are executed by no 'prentice hands; but, on the contrary, represent the highest outcome of the skill of the English mechanic in this portion of the nineteenth century.

Here, then, we cannot fail to be impressed with the fact, that it holds to the national welfare to encourage the devotion of the spare time of each man to that branch of occupation in which he most excels. In that, in the long run, he will find the most pleasure, as well as produce the most valuable results. We are aware that there is another part of what we may call the "doctrine of hobbies," that has rather a different aspect. There is an advantage in that change of occupation which to the essentially industrious man is rest. That, no doubt, is true. And the value of such change of occupation is great. But then let it be regarded in its true light. If the undergraduate fits himself for the ordeal of the schools (harder and harder as that ordeal becomes year by year), by devoting a fixed portion of his time to boating or to cricket, he does well. But if he wishes to become a first-class man, he will not go pot-hunting for prizes at all sorts of regattas or cricket-matches. So to the worker in iron or in steel, we would grudge no proper proportion of time for useful recreation. But if he wants to excel,—it will not be as a sportsman, or as a public speaker,—or as a politician,—that he can hope to do so. These subjects demand each a special study of its own, in the want of which the untried man is at a great disadvantage. It will be in something in which his habits and education prepare him for excellence that alone he can attain it. Such is the case with those beautiful models. They may very fairly challenge the world. England should be proud of the work, and of the men who can produce it. And we should all feel that when the spare time of the working man is thus devoted, very much is being done by him for maintaining that priority of excellence which it should be the great aim of the English workman, — of the Englishman of all occupations,—to ensure and to maintain.

If we have carried with us the attention of our readers it will be to the effect that there are two methods in art,—the exact and the free. The artist who can sketch in charcoal,—which we take to be about the acme of draughtsmanship,—has no more right to look down on the man who can produce a perfect working model of a steam-engine, that will stand on a dining-table, as a "mere mechanic," than the latter has to sneer at the former as a mere scribbler who cannot handle a tool. *Suum cuique*. To each his own praise and palm. Each,—and that is our contention,—is essentially an artist.

THE "ARCHITECTURAL HISTORY OF THE CITY OF ROME."

Of all places in the world, Rome would appear to have been marked out by Nature as the site of a great fortified city. A crescent of high ground six or seven miles in extent, with jutting spurs for flanking defence; a broad and deep river for its base; a group of bold eminences within the circuit commanded by a natural citadel or keep, with precipitous side, and surrounded by valleys which could be flooded at will,—these furnish all the elements for successful resistance against the arts of primitive warfare. Such obvious recommendations must have been instantly appreciated by the bold spirit who first raised his standard on the Palatine,—the nucleus of the Roman nation,—that hill from which Roman history and Roman art have their source, and where the student must seek his first lessons in the archæology of the Eternal City.*

The military instinct and administrative capacity of the first settlers are seen in the precautions they then adopted and subsequently repeated. Wherever the Roman arms were carried, one uniform system was followed. An elevated plateau was selected; its sides, when not sufficiently steep, were scarped, and the disintegration of the rock prevented by masonry fronts; at its foot a wide berm or terrace was formed, and beyond that a foss or ditch, in the bottom of which ran a narrow road encircling the site, the *débris* from its excavation being thrown up in an advanced bank or rampart, with a covered-way on its inner side. Fortified entrances were provided at points suggested by the configuration of the position, and the natural defiles and approaches. These entrances were defended by drawbridges,—a very ancient expedient for keeping an enemy at bay. The summit of the hill was traversed by a ditch, dividing the plateau into unequal portions, the smaller of which, on the least accessible side, was enclosed as a keep or "arx," and in this the garrison and the townspeople, with their cattle and valuables, sought a final refuge in troublous times. Care was taken, as in the later Mediæval fortresses, to supply this portion of the works with water, either by a well, or, where the character of the rock rendered this impracticable, by storage-tanks. Here, then, was a perfect fortress, and such the Palatine Hill, called from its figure "Roma quadrata," quickly became in the hands of its original occupants. The Sabines, who had taken possession of the neighbouring height, afterwards known as the Capitoline Hill, were, however, a constant source of annoyance to the infant nation. Stones could be hurled with deadly effect therefrom; and a work of protection to the N.W. salient of Mount Palatine was begun in the form of bastions, the substructure of which can still be seen. The conclusion of a permanent peace arrested the work, an enclosing wall was drawn by mutual consent round both the hills, and the two peoples, hitherto determined foes, were henceforth one community. The keep of the new position was, of course, the Capitoline Hill, which was severed from its neighbour by a deep natural valley. The whole fortress was one of great strength, the Tiber on the S.W. flank, a low marshy district on the south, and precipitous cliffs and high walls completing the *enceinte*. It is even now possible to trace the course of the winding path by which the Roman maidens in tranquil times carried their pitchers of cool water from the Lupercal spring, and on a beautiful map by the architect Giambattista Nolli, published in 1748, this path is clearly shown after a lapse of 2,500 years. The occupation of the two most prominent hills left them open to desultory attacks from the Aventine, the Celian, and others of the group, and, within two centuries of the foundation of the city, these had all been similarly fortified, each with its "arx," its high scarps and encircling foss, and, finally, the whole series were linked together by the noble wall of Servius Tullius, 50 ft. high and 12 ft. thick, "the usual dimensions of all the early walls." Pieces of this wall are still visible in places. The stones at its base are 7 ft. 6 in. by 4 ft., and weigh each 9 tons; they are closely fitted and cramped together. This enormous work was undertaken of necessity, and even here the defensive measures could not be allowed to stop. A line of detached posts on the heights along the enclosing crescent were required to secure them against adverse possession, and the whole site became one vast stronghold.

But, strong as it was, it was dominated by the lofty Mons Janiculum, on the western bank of the river, and this in turn was occupied and strengthened exactly on the principles adopted for the other heights. Its communication with the city was secured by a bridge across the Tiber, so constructed that it could be easily and rapidly taken to pieces. And, once more, the enclosure of the whole was attempted by the ambitious "agger" of Tarquinius Superbus.

The wall of Aurelian, "the latest girdle put round Rome," completed the intended work, which was of stupendous magnitude. The wall so built was 50 ft. high, wholly of brick, furnished with towers at close intervals, and battlemented along its whole length. On the inner side an arcaded passage or "chemin des rondes" was constructed, nearly half a mile of which and one tower still remain almost intact. Towers were added in later times, and gateways closed by portcullis, of which the grooves are still visible.

Notwithstanding all these elaborate precautions, the city fell before the attack of the Visigoths in 409, and again in 455, and its subsequent history is one long alternation of ruin and repair.

Rome passed under the protection of the Popes in 774, and the restoration and conservation of its defences engaged their peculiar care,—Leo IV. visiting and personally directing the works. This pontiff enclosed with a wall that portion of the city which then lay on the west bank of the Tiber, which was in the seventeenth century again defended by a wall on a modern or bastioned "trace." A writer of the ninth century, who made a circuit of the defences on both sides of the river, sums up the whole as consisting of 383 towers and 7,020 battlements, but he does not, unfortunately, give the total length of the line of rampart, which could not, however, have been far short of twenty English miles.

Apologists for archæological pursuits, — pursuits which have been the butt of much unreasoning ridicule,—will find a strong argument for such studies in the success which has attended them in Rome. The mere scholar in the presence of some newly-disinterred masonry learns but little from its stones, and the secrets which they convey to the initiated. He sees that they are the work of human hands, and that is all,—for him they may be 300 years old, or 3,000. The archæologist steps in, and reduces all to order, assigns a date, and furnishes the historian with another link in his chain. The earliest work, he knows, is composed of cubes of tufa split off by wedges from the parent rock,—unskilfully disposed,—without bond, with wide joints, and no mortar. As time advanced the builder composed his work of smaller and handier materials,—cut with tools to suitable shapes, and adjusted so that they lock into one another and form a compact mass; or he uses irregular polygons wedged and fitted together, their interstices filled in with smaller fragments. Later on the discovery of the setting properties of calcined and slaked limestone enabled the builders to form an artificial stone and bind detached materials into a firm conglomerate. This discovery gave an immense impulse to constructive works, and enabled them to be carried out cheaply and expeditiously. With unerring instinct their architects built the body of their mighty walls with loose stones embedded in a matrix of lime mortar, and they protected the exposed portions of their work by stone, and subsequently by kiln-burned bricks of peculiar hardness. In the size and shape of the Roman bricks the archæologist has a sure clue to the date of the work brought under his examination. The earliest are thin, flat tiles, and as time wore

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* "The Architectural History of the City of Rome," based on J. H. Parker's "Archæology of Rome," by Arthur Shadwell, M.A., Oxon. London: Parker & Co. 1883.

on they became thicker and thicker, from nine or ten to the English foot in the first century to the thickness of our modern English bricks in the fourth. In the early work, moreover, the jointing was fine as in our gauged brick of the last century, while in the later specimens the joints were often an inch thick and the bricks themselves comparatively poor and porous. Another form of construction is that commonly found in Romano-British examples, and consisted of alternate layers of stone and brick, flushed up and grouted with coarse lime mortar. For the decoration of their buildings and for statues and fountains the Romans used marble, and ransacked the whole world for choice specimens, our own Devonshire marble being highly prized. Their mode of applying it as a veneer is well known, and has survived to our own days.

The most casual treatment of this absorbing subject would be incomplete without some reference to that astonishing network of roads which from the golden pillar of Augustus, —the *umbilicus urbis*,—traversed the Imperial dominions to their remotest point. These marvellous works,—running straight over hill and dale,—laid upon strong foundations, and paved with accurately-fitting masonry,—are one of the wonders of the world. Many of them, after a thousand years, are as serviceable as when first laid down. If the fact were not vouched for by so cautious an historian as Gibbon we might well doubt the assertion that one alone out of the multitude of roads so found extended to a distance of no less than 4,000 miles. The system of posts at intervals of four or six miles, with relays of horses always in readiness, made it possible to travel at the rate of 120 miles a day for successive days, which would be very good travelling even now. These prodigious lengths of roads, all constructed with equal care and completeness, were marked in the year 123 B.C. by milestones, and "mounting-stones were fixed at the road-side for the convenience of horsemen," who of course then rode without stirrups.

Scarcely less marvellous were the numerous aqueducts,—anciently sixteen in number,—which brought daily to Rome 300 millions of gallons of pure water carefully filtered at its several sources. These were designedly built of different sections and varying sizes, in order that the workmen engaged in their cleansing and repair might find their way through the dusky labyrinth. These channels were lined with an impervious cement, and were laid out with falls of the nicest calculation for the regulation of the volume and velocity of the fluid. Sharp bends and angles checked its course where necessary, and frequent dips were arranged at intervals to agitate the water and so take up the oxygen from the air, which was freely admitted through shafts serving also as wells. These works have been added to from time to time through the whole course of Roman history, the last Pope supplying the east side of the city from the old Marcian source; but as early as the first century of our era there were, in addition to the copious services of the Imperial palaces, the public baths, and other establishments, no less than 591 open reservoirs or fountains provided for the gratuitous supply of all comers. Such a system puts us to the blush with our makeshift and half-hearted economies in dealing with one of the greatest necessaries of healthy life.

Hitherto we have scarcely touched upon the architectural history of Rome; but in approaching the subject of the great public baths or thermæ, we are entering upon the consideration of architectural works of the first magnitude and importance. The earliest of these structures was built by Marcus Agrippa (B.C. 27), and the vestibule to it is now commonly known as the Pantheum. The enormous baths of Caracalla, completed A.D. 222, are widely known, and have been restored, conjecturally, in the beautiful drawings of the late M. Viollet-le-Duc. But the largest of all were the Thermæ of Diocletian, on the Viminal, built A.D. 305, and destined to accommodate no fewer than 3,200 bathers at a time. The calidarium alone, 200 ft. by 100 ft., is now converted into a noble church. The mere scale of these buildings and the amplitude of all their proportions are, in their ruin and nakedness, impressive even to sublimity. When furnished with groves of columns of marble and jasper, the walls covered with marbles and frescoes, the niches and pedestals adorned with countless statues of gods and heroes, they must have been indeed magnificent, and have vindicated the claim of architecture to be amongst the foremost of humanising influences.

Not less remarkable are the remains of the Forums or market-places, exchanges, courts of justice, and places of general assembly on great occasions. Entered through noble gateways, recording the victories of the Roman arms, surrounded by temples, palaces, and public buildings, and adorned with statuary, these places must also have had a large share in the healthy education of the people. To the largest and earliest of them, which has now been completely laid bare, all the roads throughout the vast empire converged. Here the senate sat, and here the public voting took place. Here Cicero delivered at least one of his immortal philippics, and here, a short time after, his severed head was affixed before an excited multitude to the rostrum from which he had addressed them.

The Forum of Trajan and the rest have yielded up their secrets to the patient skill of the explorer. The renowned fragments of the marble plan of the city, engraved by order of Septimius Severus, have been recovered and pieced together, and are now lodged in the Capitoline Museum, and the Rome of the Cæsars is better known to us than it has been to any of their descendants for a thousand years past.

We are compelled to leave unnoticed the mausolea, the amphitheatres, and the palaces of ancient Rome, all of which were of great size and almost inconceivably sumptuous in their decoration and appointments. The site of the house of Mæcenas,—dear to all scholars from its connexion with Horace,—has, by recent discoveries, been placed beyond question. It stood a little to the south of the "agger" of Servius Tullius, on the low ground between the Esquiline and Celian Hills. One little room with an apse may still be traced: it was lighted from above, and on blank windows in the apse there are indications of the paintings with which they were adorned, and which the poet and his patron may have discussed as they reclined on silken couches, anointed and rose-crowned, sipping the ice-cold Falernian.

In all the works of the Romans we see the same virtues and the same vices,—patriotism, public spirit, zeal for the commonwealth, far-seeing prudence, and wise and capable administrative faculty, coupled with much individual hardship, cruelty, and oppression. While those mighty evidences of their genius were rising to record their authors' fame to the latest ages, the hordes who toiled to raise them sought in wholesale suicide an escape from a lot too miserable to be borne. In a very real and terrible sense, the words of a modern poet apply:—"The individual withered, and the state was more and more."

But we must stop. We thank Mr. Parker and his able *collaborateur* for a charming book. In its author all the necessary qualifications for the task appear to have met. "He is a scholar, and a ripe and good one." He reads ancient literature for the light it may throw on ancient art and ancient archæology, and he brings his knowledge of art to the elucidation of history. His acquaintance with architecture in all its forms is, as all the world knows, wide. A patriotic government has afforded him special facilities for prosecuting his inquiries, and has specially recognised the value of his long and arduous labours.

Having paid him our tribute of honest praise, we will proceed to exercise the immemorial prerogative of the critic and find a little fault.

The book is ostensibly written for students, and is, therefore, intended to be studied, and not merely scampered through. It lacks, however, some necessary aids to study. In the first place, the map is coarse and blurred, and in places scarcely legible; it has been drawn by some one who is not familiar with topographical drawing, and is with difficulty read even by one who sees a good deal of maps of all sorts. Moreover, a second map, of modern Rome, is much required. Throughout the pages sites of ancient portions of the city are indicated by their relation to modern buildings; but every reader is not so well acquainted with the numerous public buildings as is Mr. Parker. The value of the book would be further increased by the addition of dates in the margins. Only Macaulay's schoolboy,—who is, however, dead and buried by this time,—could carry in his head the dates at which all the great Roman characters "flourished," and all the events, great and little, in its history occurred. A very little extra type would save many a disturbing reference to other works,—works which may not always be at hand,—necessary to follow the author's narrative.

Once more, the title of the book is a misnomer. The architecture of Rome is only touched upon incidentally, as an accident connected with the history of the city, and finally Rome has an architectural history subsequent to the days of the Cæsars, and this is not touched upon at all.

The above are intended as friendly hints by attention to which in a new edition a very valuable book may be made still more valuable; and in this spirit we hope they will be received by its cultivated authors.

SHERBORNE ABBEY CHURCH.

The visit of the Architectural Association to Sherborne last Tuesday, in the course of their annual excursion, affords as good an opportunity as could be wished for recalling some of the characteristics of a very fine and interesting building, which is more talked about than practically familiar to architects and archæologists.

Our interest in the present case is more with the architectural character of the church than with its history. A good deal of information in regard to the archæology of the abbey is to be found in Professor Willis's papers on Sherborne in the Journal of the Archæological Institute, and the main points in regard both to its historical and architectural peculiarities have been brought together in the handbook compiled by a late vicar (the Rev. Edward Harston), the architectural information in which must, however, be taken *cum grano*, as it is not in all matters correct, nor, as may be expected in the work of an amateur writer on architecture, are the various points of the architecture described with correct insight into their special interest.

As it now stands, Sherborne is externally a rather lofty, not very long, church of late date, with a centre tower, and no especial development of the west front, which is the least impressive, though on some accounts not the least interesting, portion of the structure. Norman details are apparent here and there in the exterior, and more prominently in the interior, the crossing arches being Norman except the east one; but there is much more Norman influence in the interior, even as it now stands, than is apparent at a glance.

The foundation of Sherborne dates back to the Saxon period, and of the church of that period one remnant remains in the shape of the jamb stones and part of the raking head of the original Saxon doorway of the north aisle, built into the later masonry of the west front, and apparently *in situ*, showing that westward at all events the Saxon church was of the same extent as the later one. Eastward it was probably much shorter. To that succeeded in due time the Norman church, of which there is now remaining the crossing piers and the portion of the tower below the roofs, the lower stage of the south-west porch (rebuilt, but with the same stones) and some minor portions. True to the almost invariable practice of the Mediæval church-builders, the next additions were to the east end of the church; church-building in the Middle Ages almost always progressing from east to west, commencing with the most sacred part of the structure. Accordingly a Lady Chapel was added in the Early English period, which has now, as such, disappeared, and the arch leading into it from the eastern aisle of the choir is blocked up; but some beautiful details have been kept in unusually good preservation from being built up in two houses which cover the remains of this chapel. About 1436 was commenced the rebuilding of the choir, on the Norman foundations, and also a new upper stage to the tower; and it was at this period that the conflagration took place which was the most notable incident in the history of the church.

The mention of this incident leads us back to the west end of the church, from the peculiar architectural distribution of which arose the quarrel which led to the deed of "arson" which has been commemorated by Leland. As in the case of many or most other Benedictine abbeys, there was provision made for celebration of divine service for the town population, in addition to the more regular and ceremonial service of the monks themselves. In

some cases this secular service was provided for in the nave or in one transept of the church itself, in some cases in a church partially attached or affiliated to the abbey church, but within separate walls. Apparently at Sherborne there was a double arrangement. A church, dedicated as "Allhallows Church," was attached to the west end of the abbey, continuing westward in a line with it, where the services of the townsfolk were performed by secular clergy; but the more solemn portions of ritual to which the laity were admitted, such as baptism, were performed within the nave of the abbey itself, and we may presume by the regular clergy. Of the west-end church thus built in the fourteenth century, there remain four responds against the existing west wall of the abbey, and the lower portion of the wall of the north aisle; all in a very dilapidated condition, but sufficient to give the scale and general disposition of the building. The four responds, corresponding to the lines of the arcade and outer aisle walls of Allhallows Church, have been taken to indicate that there was a break between the abbey and the secular church, spanned only by open arches, the solid walls of the aisles stopping short of the west front of the abbey; an arrangement which would explain how the abbey could retain its central west doorway without being blocked by the altar of the church, which would have stood away from it at the western side of the passage of interception thus formed. The history of the jealousy which existed between the townspeople and their clergy on the one hand, and the abbey clergy on the other, and the violent breach to which it led, is well known to all who are interested in ecclesiological history. It is unnecessary to recapitulate it in detail here. The portion of the history which influenced the building, or which bears upon existing portions of it, is that the townsfolk, who seem to have been cunning to invent grievances, had assumed the right to have a font of their own in the church and celebrate the rite of baptism there, on the ground that the regulars had removed the abbey font from its proper position near the west end of the nave, to a less easily accessible position, and that they had narrowed the door leading into the south aisle, so that processions could not pass with decency or effectiveness from the secular church into the abbey for baptismal celebrations. The then Bishop interested himself in the matter, and showed, at all events, his impartiality of mind by recognising all the principal grievances of the townspeople as valid, and giving orders, in January, 1436, that the font should be restored to its old position and the offending doorway to its original width. Some delay ensued before these alterations were, or could be, carried out, and affairs came to a crisis in what, a few years ago, at Oxford would have been called "a town and gown row," in the course of which the townsfolk broke into the abbey, and a butcher among them, inflamed, like Jenny Geddes, "with holy zeal," broke up or defaced the sacred font of the regular clergy; an outrage which was outdone by that of an ingenious secular priest of the All Hallows faction, who shot an arrow with some burning substance attached to it into the thatch of the choir roof, thereby burning down what was probably a temporary roof to cover in the new choir until the vault was constructed, considerably damaging the tower, and bringing down the bell-floors and all the bells. The abbot, however, had influence enough to compel the town to pay for all the repairs rendered necessary, and the vaulting in of the choir was soon after completed. Not long after this followed, in natural course, the rebuilding of the nave to render it worthy of the new choir; a rebuilding, however, which was carried out in a peculiar fashion.

As the west end now exists, it shows, built up, the doorway which stands as a silent memorandum of the strife of those turbulent times. There are the jambs and archivolt of the original wide Norman door through which the baptismal processions originally passed from the secular church to the font in the abbey, and there is also the smaller door, which the monks in the early part of the fifteenth century built within the Norman arch, thereby narrowing the entrance and causing all this umbrage to the townsmen. The rest of the front is of late date, and of no special interest, excepting a little cruxifixion subject carved in an unusual position on the south side of one of the buttresses. The west window is a rather poorly-designed one, with the faults rather than the beauties of the late style. Originally the sill was higher up than is usual, owing to the necessity of allowing room for the abutting roof of All Hallows Church. At the restoration of the nave, under the late Mr. Carpenter, it was cut lower, and a new range of lights added, excusably, perhaps, but with rather badly-executed stonework, jointed in a very peculiar fashion. The upper portion of the south-west porch is modern Norman, replacing the late Gothic work which formerly connected it in design with the late work of the nave. This porch was so dilapidated that it had to be rebuilt, when the restoration of the nave was carried out by the late Mr. Carpenter; the lower portion, as before mentioned, being built up with the original stones; and it seems to have been considered that it was best to make it a complete design while it was being rebuilt. We should hesitate to express a decided opinion on the point without having seen the work which was removed. If it were in good preservation we should have recommended retaining it. By the way, what became of the stonework thus replaced by new Norman work?

The interior of the nave, which has been very well and carefully restored under the same hands, presents a very fine and unusual effect. We see unusually solid-looking arcades in Perpendicular style, the impost marked by a very small cap to one of the roll mouldings on either face, so small and so flat in execution that it hardly strikes the eye, and seems like a mere survival of the impost. The wide hollows, which are the usual characteristic of the pier and arch mouldings of this date, are given a new and unaccustomed effectiveness by being made to assume the appearance of a succession of shallow niches by the introduction of trefoil heads at regular distances, interrupting the continuation of the moulding. The unusually massive character of the piers, for their date, arises from the fact that this is really somewhat like another William of Wykeham job, a great proportion of the masonry of the Norman piers having been retained as a core, and cased with the later stonework. The bay next the crossing is narrower than the other arches: so the fact is stated in all the published accounts we have noticed; but that is not the way to put it. The real point is not that the arch is narrower, but that the solid mass of the crossing piers is extended eastward to form a better abutment for the great arches, after the manner of the Normans, as shown still more remarkably at Tewkesbury and Pershore. This is a peculiarly Norman characteristic, though it wears now the outer mark of the Perpendicular mason; the eastern piers are correspondingly extended towards the choir. No account of the building gives the real constructive motive of this, nor did we hear it notified in any way on the occasion of the visit to the church by so many architects on Tuesday last. Above the main arcade begins the real work of the fifteenth-century builders, who did not understand the meaning of the Norman abutments, or despised it if they did, and who accordingly ignored the extension of the pier, and divided the clearstory into equal bays, quite independently of the ground-floor piers, with very odd and very unsatisfactory effect. If this were done now, it would be called both bad building and bad design; and it *is* both, whether it were done in the fifteenth century or the nineteenth. The vault is a very fine, rich, and effective one, of the date when the assemblage of ribs was just beginning to suggest the form of the complete fan vault, the plan of the main compartments assuming a polygonal form which only needs to be carried one step further to resolve itself into the circular line which bounds the conoidal or fan vault. The main ribs, however, run through to the ridge and continue to rise to it, instead of leaving the flat spandrel left by the fan vault in its completed form. This is a constructive advantage, and gets over a constructive difficulty, but does not alter the fact that the fan vault is the more completely logical form of vaulting design. The appearance of the vault is a little impaired by the fact that the alternate ribs stop short of the springing, thus giving an appearance of weakness where all the lines ought to be strongly knit together. The choir vault has the same defect. The place of the triforium, both in nave and choir, is occupied by a shallow wall arcading, which is flat and tame in effect, and forms the weakest portion of the design. The manner in which the bosses of the vault, and the armorial or quasi-armorial bearings on the corbels of the vaulting shafts, have been coloured, leaving all the rest plain, is hardly to be commended; it has a rather gingerbread look, the more so as some of the colouring is very raw and crude.

The crossing is wider from north to south than from east to west; on three sides it displays Norman arches with plain square soffits, springing from caps of the ordinary character of the style, with coupled wall-shafts below: the western arch is low, a segmental arch,* the north and south ones stilted. The north transept is very similar in character to the nave; the south transept has a fine and massive low-pitched timber roof, panelled and with heavy carved bosses at the intersection of the beams. But the main point in this transept is the great south window, filled with stained glass designed by Pugin and executed by Hardman. It is a *Te Deum* window, with groups of two figures in each compartment; of course, the figures are stiff and archaic, as Pugin thought it right they should be, but there is a breadth and originality in the whole which lifts it quite above the ordinary range of stained glass design, and in point of æsthetic it is a splendid example of what stained glass should be: not a succession of pictures with numerous groups, and with "furniture" accessories, but merely ideal figures treated entirely in one plane, and interwoven with decorative scrolls containing texts. This is the kind of use to make of stained glass; and putting aside the affectation of archaism, which, of course, we do not recommend, it is a work which every one concerned in that class of design would do well to study, and endeavour to reproduce as much as possible of its excellence of conception without its defect of style in regard to drawing.

The eastern arch of the crossing presents a remarkable appearance. The idea of the builders of the present choir seems to have been to carry on the new vaulting across the crossing space, instead of merely abutting it against the eastern wall of the tower; to which end they both boldly and cleverly built an arch in the wall over the Norman arch, took out the latter, and worked the jamb and soffit of the new arch in foliated panelling to harmonise with the vaulting surfaces. The boldness of the builders in cutting this great void under the weight of the tower is certainly more remarkable than their prudence. The incident serves to remind one, however, how much variety there is in Mediæval buildings: in spite of the universal prevalence of one style at any special date, there is hardly a church of size and importance which will not present some feature peculiar to itself, and not to be found elsewhere. The general character of the choir is the same as that of the nave, with differences only in minor features. A complete scheme of colouring has here been carried out, the lines of the ribs being marked in gold and colour, and the spaces filled in with decorative work in flat colouring. This has been executed by Messrs. Crace, and the general effect is very harmonious; it is an example (rather rare, unfortunately) of colour having been applied in an elaborated manner to a Mediæval interior, without any crude or violent effect. This is not the way the original builders would have coloured it, certainly; but it is none the worse for that.

The choir was restored under Messrs. Slater & Carpenter, and presented a great deal more than merely architectural or artistic problems. The south wall had settled outwardly to a considerable extent, and the vaulting had consequently dropped so much that many of the vous-soirs were only hanging together by their upper edges; and a rude warning had been given some years before the actual restoration by the sudden fall of a considerable portion of one of the ribs. The wall has been straightened, and the restoration of the vaulting to a state of security has been successfully accomplished. The state of the remains of the Lady Chapel is, to our thinking, one of considerable difficulty. It seems a pity that they should be left blocked up in the walls and cupboards of a house (though, as before observed, they have remarkably well preserved there); but we can hardly say that we think it worth while to rebuild the Lady Chapel, working in the present remains. What is left might be cleared and protected, so as to preserve it and at the same time render it easier of access.

* It is very slightly pointed, but we presume this has been done in the course of wedging up and repairing these arches during the restoration. As a flat, segmental arch, it would look a very dangerous one for the weight that is on it.

One vaulted compartment (quadripartite Early English work) at present spans the ceiling of a bedroom, where it has been duly whitewashed with the rest. The finest bit is a singularly beautiful capital, as sharp and clean as if new, which is to be discerned by the light of a candle held in a dark recess on the stairs; and very curious and interesting this relic of Mediæval art looks when thus seen by artificial light amid its incongruous surroundings. Adjoining the north aisle of the choir is an Early English chapel, at present used as the choir vestry, formed by building two walls against the transept and choir walls so as to enclose a space; so that we have here an apartment which is Early English on two sides and Norman on the other two, the south side showing among other things some intersecting round arches, forming part of the external architectural design of the north wall of the choir aisle. Another fact to be noticed about the choir is the fine and rich tone which the stone has derived from the effects of the fire, which are still quite visible; indeed, we heard it proposed that conflagrations might be ordained for the purpose of obtaining the same tone in other buildings; a proposition akin to the practice of Elia's Chinese, who, in their early discoveries in cookery, set fire to their houses to obtain roast pig. The experiment must be practised on good, hard, close-grained stone, however, to meet with success.

The tower at Sherborne has gone through great perils. The crossing arches had settled so that the masonry courses cant downwards from the angles to the centre, and are still in that position; and the effect of the bells, the heaviest swinging peal in England, of course did not mend matters. In 1830 measures for its security were taken by a Mr. Percy, who is disrespectfully spoken of in the local guide-book aforesaid, for having spoiled the Norman arcade above the tower arches by bricking up a good deal of it, but who, nevertheless, probably saved the tower by the system of iron ties which he inserted, and by the introduction of two timber trusses under the bell-frame, to take its weight off the two weaker (east and west) walls, and throw it on to the other two. This was the more necessary as the east wall has a large crack in it. The upper late portion of the tower is much thinner than the substructure, being set back 1 ft. 6 in., resting, it is true, chiefly on the arcade, but getting rid of a great deal of weight which might, probably would, have brought the whole down if it had been carried up full thickness. The main external line is carried up, to the eye, by buttresses. The upper portion of the tower looks, however, somewhat ruinous, on the east side especially, where the disintegrating effect of the fire was added to that of settlement. The peal of bells, which we had the opportunity of seeing in full swing, looks a formidable moving load for a tower in that state (the largest bell weighs nearly three tons), but the vibration imparted to the walls is much less than might have been expected, and there seems no reason to suppose that the ringing is attended with any danger to the tower, for a long time to come at any rate. The bells have been altered in position; they all swung in one plane formerly, and the effect on the tower of the two largest, swinging simultaneously in opposite directions, is said to have been rather formidable. The tenor bell is now swung at right angles to the others. Whether this ought theoretically to lessen the shaking effect of the heavier bells is a scientific question still open to dispute; but it appears to have practically that effect in this case. The sight of this large and closely-packed mass of bells and bell-gear, metal and timber, hurling round and back again, the wild clang of the treble bells, and the thundering stroke of the tenor each time it comes round, heard and seen at close quarters, produce an effect on eye and ear to be remembered.

Of the conventual buildings little is left, but that little includes two very fine specimens of timber roofing, on a small scale, but of very effective and solid design. Illustrations of these are to be found in the Journal of the Archæological Institute, which give the design, but produce an appearance of greater massiveness than is the fact, or than would have been in any way necessary. These and the few other portions of the old buildings are being worked into the new King's School buildings, which have been in progress for some time, under Messrs. Slater & Carpenter, and their present representatives, Messrs. Carpenter & Ingelow. They are all modern Gothic, for the most part admirable in style, and keeping up the architectural traditions of the site in a very worthy manner, and on another occasion would merit more detailed description and illustration; but the Abbey Church has exhausted our limits for the present.

ON THINGS CURABLE.

Not in vain will the alarm have sounded from Egypt and Asia, and sped through what we are pleased to call the civilised world, if the dread fear of cholera will have aroused the Governments of all nations from their somewhat indolent way of grappling with the questions concerning the sanitary conditions of cities to bolder measures. Though that disease may happily not reappear here, hundreds die yearly from typhoid and *preventible* diseases. Mr. George Buchanan, medical officer to the Local Government Board, says, in the very lucid and sensible circular which the authorities have issued to the local sanitary authorities on the precautions to be taken against the infection:—

"It may fairly be believed that in considerable parts of the country conditions favourable to the spread of cholera are now less abundant than in any former times, and in this connexion the gratifying fact deserves to be recorded that during recent years enteric fever,—the disease which in its method of extension bears the nearest resemblance to cholera,—has continuously and notably declined in England. But it is *certain* that in many places such conditions are present as would if cholera were introduced, assist in the spread of that disease. It is to be hoped that in all these cases the local sanitary authorities will *at once* do everything that can be done to put their districts into a wholesome state; measures of cleanliness, taken beforehand, are of far more importance for the protection of a district against cholera than removal or disinfection of filth after the disease has actually made its appearance.

It is important for the public very distinctly to remember that pains taken and costs incurred for the purposes to which this memorandum refers cannot in any event be regarded as wasted. The local conditions which would enable cholera, if imported, to spread its infection in this country are conditions which, day by day, in the absence of cholera, create and spread other diseases: diseases which, as being never absent from the country, are in the long run far more destructive than cholera, and the sanitary improvements which would justify a sense of security against any apprehended importation of cholera would, to their extent, though cholera should never reappear in England, give amply remunerative results in the prevention of those other diseases."

If then there be places still in so unsanitary a state, how is it that with the special powers conferred upon the vestries and district boards with regard to the dwellings of the working classes by the Artisans and Labourers' Dwellings Acts 1868 to 1882, and which would seem to provide for every contingency, the Act appears to still remain in some cases a dead letter? Who is it that has the *power* to enforce the necessary measures being taken for so cleansing this city that should the disease approach our shores it will take no hold? In Paris Dr. Fauvel, in a report he made in July to the Academy of Sciences and also to the Academy of Medicine, laid the whole blame of its appearance on India and on English negligence. And however absurd or unjust such an accusation must be, it behoves us to *prove* we are not negligent. In the House of Commons, July 24th, when questioned as to the distribution to every householder in the kingdom of the instructions as to the necessary measures to be taken to prevent the outbreak of cholera, the Right Hon. Sir Charles Dilke, President of the Local Government Board, stated his department could not issue such instructions, as it could not supersede the action of the local authorities. If, however, the danger should become imminent he had no doubt such distribution would be undertaken by the local authorities. The authority of the parish of Kensington had already done it.

Are we to wait for the danger to become imminent? There are in this splendid city, in all our great towns, plague spots, Stygian styes left as uncleansed and uncared for as in the Middle Ages, and which are like Lazarus at the gates of the Dives of this world. Why in each district, and for the contemplation of the vestrymen, is not a map of London hung up on the vestry walls, and on it painted, in some vivid colour, the spots under their immediate jurisdiction most needing their supervision and inspection? And let it be incumbent on their position that once a fortnight one of their body inspect personally these different places. The Government can surely afford, out of the rates and taxes we pay, lime-wash and good water.

Then take such an apparently simple yet such an important matter as the clearing of dust-bins. As we have the benefit of knowing one or two of the most earnest sanitary reformers of the day, we are naturally not merely enthusiastic but practical, so every Friday the dustmen clear the bin. Placid and calm, with a feeling that "all's well," I step on to the balcony to enjoy the moonlight night, to murmur "*Com e gentil*," when, oh! ye gods, from neighbouring dust-bins uncleansed, arise odours that turn the dulcet words on my lips to the parody a rising young actor tells me he sings as he flies at night past Covent Garden-market,

"Oh, ye stinks of London,
Ye cruel stinks of London!"

That excellent little pamphlet, the *Pall Mall* "Extra," tells us the remedy is in our own hands,—to lodge a complaint at the vestry against our neighbours, and have them indicted as a nuisance whenever such a state of things occurs. Have I the courage to make myself odious? Yes, I have, *once*. But have I the courage to do so every Friday? No. To run the gauntlet of the whole street? No, no, no. But there should be no necessity to do so. This is also a thing curable. We will suppose an order be issued that the dust-bin in every street be cleansed every week: say they take our street (A) every Friday, and clear every house in the same street on that day. If the owner refuse to have his bin cleared, let him be fined. Let another entire street, say B, be cleared on Saturday, another on Monday, and so on. By this means once in every week every house in London would be cleared, and instead of dust-heaps and mounds being allowed to accumulate to enrich some golden dustman, why should there not in various parts of London, in open spaces, a field be left walled in and paved with concrete, where all refuse matter should be shunted and cremated? Much stress is laid, also, on the cleanliness of cisterns. This also is a question that should not be left to the ignorance or indolence of the proprietors of a house. Some time ago I dined at a very fine house, and had a very splendid dinner: the question turned on this very subject. "Cistern," said the lady of the house, smilingly; "must cisterns be cleaned? I've never had mine done." "How long have you been here?" said a gentleman (who had been quaffing the harmless beverage pretty freely) in a rather appalled tone. "Three years," was the reply. He turned somewhat pale. I merely beckoned to the butler, and, putting down my glass of water untasted, murmured "champagne," to which beverage I remained faithful at that dinner-party. Were an inspector to call at every house once in six weeks with a book, in which every householder had to inscribe when he had last had his eistern cleaned, this would be another state of things made curable.

The foe so dreaded comes, when it comes, swift and terrible; it loves neglect and dirt, which forge for it the weapons with which to strike from those abodes of misery into the very strongholds of the rich, rousing them from their dreams of security. It may not, please God, approach these shores. Should it, let it find our cities so swept and garnished, our crooked places made so straight, that it will depart *un*-harming from our land.

But it is not merely a possibility of evil that should rouse us when, as Mr. Buchanan says, an ever-present danger is here, and one that can be vanquished if all would help, and no one is too humble, no one is too insignificant (and it is not for the clever and intellectual, but for the poorest to whom, by some happy chance, this paper may filter down, that I write), too infinitesimal in the vast scheme of creation, not to do his or her part. It is a duty (too often neglected on the part of ladies of a high social rank) to see personally to the hygiene of their home,—that it is well-ordered, clean, not merely veneered over with refinement, as it is the duty of a woman in humbler life to make her home to her husband a counter-attraction to the gin-palace by a cleanly room, well-cooked food, a trim person, and a quiet tongue. Dirt and ignorance are the legacies of ages. Are we to

pass away adopting the somewhat indolent Italian motto, "Do not disturb Camarina"? They think, possibly, if the mud is left undisturbed at the bottom of the still lake no miasmas will arise. But we know that to drain the mud and filth away, to leave the lakes, the Camarinas of this world, very pools of Bethesda,—things of beauty, joys for ever,—is, or ought to be, the work of the nineteenth century; the preaching of things curable will bear fruit; a happier Aurora is breaking for the coming ages, and even now we could exclaim, with a slight alteration of the poet,—

O God,
What we *might* make of thy fair world
Did each but do his best and highest here.

Notwithstanding the onslaught of Doctor Fauvel, London, with all its faults, is supposed to be the healthiest city known. What better reply to his philippics than to draw his attention to those canker-spots eating into the heart of lovely, brilliant Paris? It is not from Egypt or from Asia alone the Parisians dread pestilence when it is seething in very hot-beds of things curable. An excellent French writer, M. Robiquet, has not faltered in showing the necessity of ameliorating this state of things. If we belong, he says, to those who think it is a duty of the Government to quell, with the greatest energy, the criminal attempts of all those who are incorrigible enemies to social order, we, at the same time, must admit that no Government has the right to view with indifference the conditions of existence of the poorest portion of the population. The question of the misery of the masses is too vast a one to be settled in a few lines. It requires treating in detail, and, for the moment, we could only enter on the question of what sort of places are inhabited not only by the indigent of the city, but by the numerous workmen, not only Frenchmen but foreigners, who are drawn to the capital by the desire to make money. The Census of 1881 proved Paris counted, amongst her inhabitants, 677,253 workmen and artisans; 255,604 shopmen and clerks; and every year foreigners flock in greater numbers to Paris. The indigent population of Paris mounted in 1872, when it was estimated at 100,000, to 123,735. Let us see how this great army of poor are lodged, and at points tend to agglomerate. It might be thought the piercing of large and magnificent thoroughfares had given an ever-increasing salubrity, and, of course, in those parts of the town where large Boulevards, fine trees, and plenty of water abound, they have. But the workmen who energetically asked for work, and had it to the heart's desire, have in erecting palaces destroyed their own homes, driven themselves and their families from the centre of the town to the extreme outskirts, and over-crowded the already crowded *arrondissements*, such as La Gare, Saint Lambert, Garel Charonne. Such agglomeration becomes insalubrious, and according to Doctors Brouardal and Muller, the number of victims to epidemics of typhoid fever and diphtheria have more than doubled since ten years ago, and the augmentation and spread of diseases are noticeable in all those *arrondissements* where the overcrowding in poor dwellings is taking place,—an overcrowding due not only to the wants of the poor, but to the rapacity of the landlords: so apartments are let and sub-let, divided and sub-divided *ad infinitum*, and entire families are crowded into a single room, icy in winter, torrid in summer, and which in many cases only receives daylight from a fœtid staircase or *courette* saturated with miasma. The latest returns show that there exist in Paris 3,000 lodgings for the poor, which have neither stoves nor chimneys, and 5,000 lighted only by a *tabatière*, 1,049 families having four beds in one room. There is also a striking want of equilibrium in the progression of the number of dwellings for the poor to live in, and the population crowded into them in the proportion, in fact, of 80 per cent. to 20 per cent.

These statistics of M. Villard to the municipal council prove it is only possible to house the increasing number of poor by decreasing the accommodation at present afforded them. This deplorable situation is not peculiar to Paris; in 1876 in Berlin a tenth of the population lived and perhaps still live in cellars without light, without air, frequently inundated by the overflow of water and the reflux of neighbouring drains. In Vienna, also, an onslaught has been made on England, charging her with a neglect of precautions, when in their very midst they have a crying scandal to any Government, to any municipality, and that the Viennese themselves call the "Blot of the Kaiserstadt." Through the heart of the town flows a filthy stream of putrid matter past some of the finest palaces and boulevards in Europe; it is called the Wien-fluss, and has for years roused the indignation of the population, and only recently the press have demanded it should be covered over and its course changed. But to return to France. The law of 1850 on sanitary conditions of insalubrious dwellings is never carried out. In Paris and Lille, in large towns such as Marseilles, Lyons, Bordeaux, and Nantes, the Commission for Insalubrious Dwellings performs its functions in the most intermittent way, or does not exist at all, and even in Paris, notwithstanding the very real activity of the Commission, all competent men acknowledge that the law of April, 1850, is a perfectly illusory application. The proprietors, protected by administrative injunctions, know how to profit by all the delays and means of resistance that the law itself has naïvely taken pains to put at their disposal; thus there exist in the heart of brilliant Paris groups of so-called dwellings which the very dogs brought up in a good house would disdain as a kennel, and which are very hot-beds of infection. Accursed spots there are like the Cité Jeanne d'Arc, which consists of a colossal building of five stories high, containing 1,200 lodgings and 2,486 lodgers. A terrible epidemic of small-pox denuded this place in 1879. The reputation of the Cité Doré is not much better; and Dr. Bournville cited this "ante-chamber of the cemetery" to the Health Committee. One could multiply details about things which are shames to modern Paris. The Cité Grand Rue des Meaux, where 1,700 individuals inhabit a long building in ruins; the Cité Philippe, where seventy rag-pickers burrow like rabbits; the *clos* of the Rue Secretan, a stinking marsh, which serves as an *asile* to 300 people; the Cité de Biffins, Rue des Gourmais, another haunt of the rag-pickers, in rooms or cellars; and in the Rue des Boulangers, a house where 210 Italians and street musicians herd in a state of indescribable dirt. But why dwell on such miseries? Let the remedies be found. What is the use of spending millions on the construction of underground improvement, when above it ignoble and filthy spots are left open to the skies. Things, alas! must be spoken of as they are; and these are spots that must be done away with entirely.

Many proprietors refuse to let to workmen who have large families, and proper dwellings are too dear for them. Many schemes to meet this great and serious question are now under consideration by the Government. The *Builder* gave some weeks ago a long and exhaustive article on the subject, detailing them *in extenso*, and the Commission who have been over here lately to study our system of sewers have also under consideration the ingenious combinations of the Building Societies, the Industrial Dwellings Company, &c., who have constructed many thousands of workmen's dwellings.

Thus, we may hope, the example of these two united countries, the first in civilisation, will induce other nations, even Indians and the heathen Chinee, to join in this crusade of cleanliness, and the preaching of things *curable*. The very countries that attack us are in such dire need of precautions that they would do well to have Mr. Buchanan's excellent circular translated and disseminated; it ought not to need a panic (the thing indeed most to be avoided, and it is by using wise precautions and creating a feeling of security such an evil is to be avoided) to rouse countries and municipalities to the doing of their duty, and Continental cities would do better to stamp out the far worse evils than ours that exist in their midst than to blame us.

CARLEON.

Proposed New Theatre at the Crystal Palace.—At the half-yearly meeting of the shareholders of the Crystal Palace Company, the Chairman (Mr. McGeorge) moved the adoption of the report, which stated that continued experience in regard to the cost and difficulty of insurance proved to the Board the desirability of removing the theatre from the building, and acting in accordance with the resolution of the general meeting in February, 1882, the directors had determined to advertise for designs and plans with a view to obtain an estimate of the cost of a theatre, to be erected outside the Palace, but in the company's grounds, should it be found advisable for economical and other reasons.

PROFESSIONAL PORTRAITS. No. 1.

"I cannot but remember such things were as were most *queer* to me."—SHAKSPEARE (adapted).

PORTRAIT-PAINTING is, just now, much in fashion, and every artist in turn tries his hand thereat. I claim to be, in some sort, an artist. Let me, then, be in the fashion, and attempt a portrait of "Our Firm," as it existed not very long ago. I have had the subject of my sketch before me these many years, and in the best of all attitudes, that of an unconscious sitter; I have watched our firm attentively in all its moods; I know every lineament well, and could lay them in from memory, and I have studied from the originals those little "bits of truth," which put life into every picture.

Our firm comprises (I shall speak in the present) three members,—and this I take to be the golden number. By a suitable division of labour, and a prudent concurrence of effort, the greatest good of the greatest number may be obtained by this triple arrangement. No one exactly knows how our firm has grown to its present state, or what chances brought (and keep) together three persons of such widely varying character and divergent tastes. The senior member carries us back to the very early years of the present century. He belongs to the old school, and is every inch a gentleman: tall, slight of build, erect, white-haired punctilious in dress and demeanour; he is the beau ideal of a professional man. He wears a white cravat, a close-buttoned surtout coat, and the neatest and shiniest of little Wellington boots. His bearing is full of dignity, tempered by a gracious suavity; he is, in short, a good specimen of a type which is, alas! fast dying out.

He arrives with mechanical regularity at eleven o'clock, and passing with airy tread through the outer office in which we sit, never fails to greet us with a courtly bow and a cheery "good morning, gentlemen." He repeats the formula,—varied to suit the occasion,—when the office-boy is the sole occupant of the apartment.

He has a room to himself, furnished with good old dark mahogany furniture; a Turkey carpet (they were costly luxuries when it was bought) covers the floor. The walls are hung with faint, ghost-like drawings,—architectural studies, when the Greek taste, and what may be called the "Compo-Tudor" taste, prevailed, drawn in the finest of lines, and washed in with the hottest of sepias. The delicate distances fade into imperceptibility, and the foregrounds are peopled with groups of figures, strangely clad, wandering over a site preternaturally rugged and broken, and admiring the surprising beauties of the architecture.

It is not known how our senior member occupies the circling hours. He is believed to have built largely for the aristocracy in his youth. Now and then he will have out some old plans, and patiently re-arrange some minor accessories of the building they represent; and then he will carry off the result into the country, where he will linger for weeks round the scenes of his early exploits, a welcome guest, no doubt, wherever he goes. One morning he will re-appear with his courtly bow and his accustomed salutation, to disappear behind the mahogany door of his private room, and resume his mysterious round of duties. He goes daily to his club, about two o'clock, and does not hurry back; but returning when the afternoon is well spent, he is "left sitting" when we close our day's work. It is whispered that he "manages" a great town estate for a wealthy friend, and that the emoluments arising thence are an important item in the revenue of the firm. In what this management consists we cannot guess. He never requires our assistance,—occasionally he will ask for a cake of hard colour, or a scrap of tracing-paper. He writes letters of which he never requires copies, and he posts them himself. The only service he demands of the office-boy is that his writing-table shall be in perfect order when he arrives; his gold pen, pencil, two-foot rule, &c., spread out in order due on a clean piece of white blotting-paper. In politics he is a Tory of a pronounced and uncompromising stamp, and in religion he is a moderate High Churchman. He reads the *Times*, the *Morning Post*, and the *Guardian*. He occupied the position in which we now find him when the oldest servant of the firm entered the office, and he bids fair to outlast us all. He was never known to offend, or even to momentarily annoy, any

one, and he has the hearty respect and goodwill of all.

The second member of our firm is a very different person. He bursts upon us at all hours, and always at high-pressure speed. He is fat and florid; wears loose light-brown overcoats; is partial to white waistcoats, which his figure gives him peculiar opportunities of displaying, and he does not despise a white hat. His gold rings, chains, eye-glasses, and jingling trinkets, are a standing aggravation to the younger clerks. He bustles through the outer office tearing open his letters, without a word for anyone. His bell is ringing all day long, and directions are hurled at us thick and threefold through his half-open door.

> "St. George! a stirring life they lead
> That have such neighbours near."

He is the business man of the firm, and looks it,—that is, he looks like a clerk of works who has come into a thousand a year, and has not yet learnt how to "dress the part." Of course he never draws. It has been positively asserted that he never did draw anything. He never writes a specification, nor, indeed, anything but letters, which he writes well, and at an amazing rate,—and cheques. He is punctual in his payments, and for this virtue many things are forgiven him. He runs all over the three kingdoms bringing home budgets of work,—much of which is wrested from unwilling clients, and never really comes to anything. He is knowing in all financial matters, and has his hand in a good many schemes. He is a Liberal in politics, and in religion a Nonconformist, and in everything he is impatient of contradiction or argument. His room is not furnished like that of his senior. Fractured iron girders, bricks, concrete-slabs, dusty old models of bridges, cubes of stone and marble, what not?—these litter his den and jostle on his crowded shelves. His table is strewn with papers in the wildest disorder, the newer crop overlying the accumulation of years,—and yet he is able to pounce upon any document he may want,—striking it with the swift precision of a falcon. He has a loud voice, and a hearty, infectious laugh,—makes a good chairman at a business meeting or a dinner,—has a store of anecdotes of all sorts. He was never known to go out of his way to be agreeable to any one from whom he had nothing to expect, but on the other hand none of his *employés* can accuse him of having done them a bad turn, and every one is ready to grant that if he is a little rough his heart is in the right place. He knows all about ancient lights and party-walls, and the provisions of the Building and Local Management Acts are A B C to him. His strong point is in managing refractory builders, and for them he has no mercy. He regards himself as holding a brief for his client, and he shrinks from nothing that will further his client's interest, for which in turn he makes that client pay. The stoutest builders quail before the storm of expostulation, invective, banter, with which he overwhelms them:—of biting sarcasm and loud, irritating, exasperating laughter. They retire discomfited and crestfallen, uttering in their retreat remarks intended for our ears,—terse, but not complimentary; Parthian shots fired with fierce intent, but which fall blunted against the closed door behind which our second member,—who has effaced the scene from his mind,—is already deep in another subject.

The architectural work proper is done by the junior member of the firm. He is a young man,—a comparatively recent importation, having been brought in on account of his artistic gifts and family connexions. He is an exponent of "culchaw" in its latest phase, and by the help of some real ability, a certain languid grace, and a fluent tongue, he contrives to pass for a much cleverer man than he really is.

He wears a bronze-brown velvet jacket without a collar, and his necktie is invariably a knot of strange pleasant colour. His room is decorated with photographs, original sketches for pictures by the lesser men of the modern Renaissance school; bits of carving, stained glass, Moorish tiles, and pottery and faïence of all kinds. He is a ready and versatile designer and draughtsman, and does understand his part of the business. He has travelled all over Europe, and has seen all that should,—and much that should not,—be seen, and he has read largely, especially in certain forms of literature. He is well aware of his own value, and only unbends with us to poke fun at his absent partners, and air his pleasantries on the old-fogeyism of the one, and the brusque vulgarity of the other. He is at no pains to conceal from us his complete contempt for both. In their presence he is to each of them studiously polite and bland. His forte is church work, and he is really learned in all matters of Mediæval ecclesiology and ritual, and an expert in iconography, archæology, hagiology, and such like recondite matters. He has no politics to speak of, and in regard to things of higher import avows himself an agnostic.

He completes this strange company,—

> "Where order in variety we see,
> And where, tho' each one differs, all agree."

The members of our firm move in separate spheres, and never collide. The energetic man gets the work and "sees it through"; the artist gives it a suitable form and expression, and whatever he does passes unquestioned, so strong is the faith in him; and the oldest member throws over the whole an air of unimpeachable respectability. He will die some day, and the spell will be broken. The artist and the practical man will not work together, and can neither of them work successfully alone, and "our firm," like the "wonderful one-hoss shay," in Oliver Wendell Holmes's delightful ballad, "will go to pieces all at once, just as bubbles do when they burst."

THE LAST OF OLD CAREY STREET.

The poetry and romance of Carey-street, Lincoln's Inn-fields, is passing away. Seven years ago Mr. John Diprose wrote, "Carey-street is in a transient state, only a few houses and inhabitants are left," and when the old inn once known as the "League and Seven Stars," so named from the Seven United Provinces, now abbreviated into the "Seven Stars," shall become the prey of the house-breaker, the street will only be suggestive of law and lawyers and their prosaical surroundings.

Travel back somewhat farther than two hundred years and we behold Samuel Pepys, F.R.S., passing up Clement's-lane, turning off into Yates's-court, and "Then to Cary House, a house now of entertainment next my Lady Ashly's, where I have heretofore heard Common Prayer in the time of Dr. Mossum," Dean of Christ Church, Dublin, and afterwards Bishop of Derry. We also find the chatty Secretary to the Admiralty "at my Lord Ashly's by invitation, to dine there. . . . Another pretty thing was my Lady Ashly's speaking of the bad qualities of glass-coaches; among others the flying open of the doors upon any great shake: but another was that my Lady Peterborough being in her glass-coach, with the glass up, and seeing a lady pass by in a glass coach whom she would salute, the glass was so clear that she thought it had been open, and so ran her head through the glass!" But there were other attractions in the neighbourhood for Samuel Pepys. He had but to turn round the corner of the street named after an ancestor of Sir George Carey, who at one time filled several high offices of State, to pass to the Duke's Playhouse, and see the never-to-be-forgotten performance of the play of "Macbeth." "The king and court there; and we sat just under them and my Lady Castlemaine, and close to a woman that comes into the pit, a kind of loose gossip, that pretends to be like her, and is so, something. And my wife, by my troth, appeared, I think as pretty as any of them; I never thought so much before. The king and Duke of York minded me, and smiled upon me, at the handsome woman near me: but it vexed me to see Moll Davis" (an actress and afterwards a mistress of the king, "whose dancing in a shepherd's clothes did please us mightily"), "in the box over the king's and my Lady Castlemaine's, look down upon the king, and he up to her; and so did my Lady Castlemaine once, to see who it was; but when she saw Moll Davis, she looked like fire" (and the time was coming when she would speak of and to Moll in words of burning flame), "which troubled me." This favourite theatre of the diarist was originally a tennis-court, and was converted into a theatre by Sir William Davenant, and opened in the spring of 1662, "having new scenes and decorations, being the first that were e're introduced in England." "The Tragedy of Macbeth," as witnessed by Pepys, altered by Sir William Davenant, "being drest in all its finery, as new cloaths, new scenes, machines, as flying for the witches with all the singing and dancing in it: the first composed by Mr. Lock, the other by Mr. Channell and Mr. Joseph Priest; it being all excellently performed, being in the nature of an opera";—that is, Shakspeare as diluted by Davenant,—so sayeth John Downes, in his "Roscius Anglicanus," written 180 years ago.

In Carey-street stood the "Grange Tavern," where now stands King's College Hospital, with its old picturesque yard and its gardens, the frequent resort of the players at the Duke's Theatre. Davenant, in his play, "The Playhouse to be Let," says, and in the quotation it will be seen that the phrase "special trains" was long anterior to railways:—

"Housekeeper. The poet has a special train behind him; though they look lean and empty, yet they seem very full of invention.

Player. Let him enter, and send his train to our house-inn, the Grange."

In the gardens of the "Grange" Pepys may have chewed a quid of tobacco and drunk a glass of "buttered ale" to toast his friend, William Cartwright, one of Tom Killigrew's company, who, dying, left his books, pictures, and furniture to Dulwich College. "To the king's playhouse, and there saw 'Henry the Fourth,'" and, contrary to expectation, was pleased in nothing more than in Cartwright's speaking of Falstaffe's speech about 'What is honour.' The house full of Parliament men, it being holyday with them: and it was observable how a gentleman of good habit, just sitting before us, eating of some fruit in the midst of the play, did drop down as dead, being choked; but with much ado Orange Moll did thrust her finger down his throat, and brought him to life again." A great favourite among the aristocracy she seems to have been, for Pepys records that on the 29th of August, 1666, he "Found Sir W. Pen talking to Orange Moll of the King's House." "Orange Nell" had by this time been promoted from the Coal-yard,* Drury-lane, to Drury-lane Theatre. "Nelly, a most pretty woman, who acted the part of *Cœlia* to-day very fine, and did it pretty well. I kissed her, and so did my wife; and a mighty pretty soul she is"; but long before this Pepys had been love-stricken at the corner of Carey-street. He had seen her previously in the bloom of her girlhood in his morning walks through the hedges and green banks of Drury-lane. "To a play at the Duke's of my Lord Orrery's, called 'Mustapha,' which, being not good, made Betterton's part and *Ianthe's* but ordinary too. All the pleasure of the play was, the king and my Lady Castlemaine were there; and pretty witty Nell Gwynn, at [of] the King's House, and the younger Marshall which pleased me mightily." "Mrs. Pierce tells me that the two Marshalls,"—Nan and Beck, and Pepys was mightily pleased with both,—"are Stephen Marshall's, the great Presbyterian's daughters: and that Nelly [Gwynn] and Beck Marshall falling out the other day, the latter called the other my Lord Buckhurst's mistress. Nell answered her" in language that savoured strongly of the Coal-yard, the place of her birth, and at the same time had the best of it. One more reference to the Duke's Theatre, which was soon to become a tennis-court again. On the 9th of April, 1668, Pepys writes, "I up and down to the Duke of York's playhouse, there to see, which I did, Sir W. Davenant's corpse carried out towards Westminster, there to be buried. Here were many coaches and six horses, and many hacknies, that made it look, methought, as if it were the burial of a poor poet."

On the 30th of June, 1662, Pepys introduces us to a notable lady whose memory lingers in Carey-street and neighbourhood. "Told my Lady Carteret how my Lady Fanshaw is fallen out with her for only speaking in behalf of the French, which my Lady wonders at, they having been formerly like sisters." Lady Fanshawe, in her "Memoirs," writes:—"Upon New Year's Day (1656) my husband fell very sick, and drew his upper lip awry, upon which, that day, we came to London, into Chancery-lane, but not to my cousin Young's, but to a house we took of Sir George Carey for a year." Lady Fanshawe's second son, Henry, was born in Portugal-row, a nameless street in Stow's days, so named in consequence of her husband, Sir Richard Fanshawe, having been ambassador to that country.

There was a time when the Grange Inn was a grange for the storing of the crops that grew in

* The searcher for the remains of Romantic London will travel Drury-lane in vain to discover this yard. Its name has been altered to Goldsmith-street. Why? We gave a view of it long ago.

the fields now covered by Lincoln's Inn and its square, and extended beyond the "foul and miry" pathway which, in after time, was called Chancery-lane, and hence, perhaps, the name given to the tavern, the Plough, now in process of demolition, which stood closely adjoining to the Grange Inn. The following is from *Notes and Queries*:—"Willis, writing from Dunstable, April 27th, 1748, Wednesday night, to 'John Duncombe, esq., att His Seat at Barley End, neer Ivinghoe, Buckingham County,' says, 'If you will send me any papers to London at the Plough Inne, Carey-street, &c.'" Browne Willis was the author of "A Survey of English Cathedrals," and many works on architecture, antiquities, and topography. The Plough at one time had for its landlord John Gully, the prize-fighter, the conqueror of Cribb and champion of England, and representative of Pontefract in Parliament. Seymour, in his "History of the Parishes of London and Westminster" (1734) writes:—"St. Clement's-lane comes out of Butcher's-row, and fronts Clement's Inn. Then, passing by St. Clement's Inn and Boswell-court, it runneth northwards into Clare Market, and in its passage takes in St. Clement's pump or well, of note for its excellent spring-water. A little above this is Plough-alley, which, with three turnings,"—as may be seen in Rocque's "Plan of London" (1726),—"goes into a street by the Plough stables, which fronts the playhouse by Lincoln's Inn Grange, in Little Lincoln's Inn Fields," passing close to the lodging of Hollar, the engraver, who writes to Aubrey, the antiquary, in 1661,—"Myself do lodge without St. Clement's Inn back door as soon as you come up the steps and out of that house and door on your left hand two pair of stairs, into a little passage right before you"—Clement's-passage, leading to Clare Market. Butcher's-row, which extended along the north side of Clement Danes' church, has passed away within the memory of the oldest inhabitant; the site of Boswell-court is covered by the High Courts of Justice; Clare Market, which was once, but is not now, a market, and Clare-street, in which the market is held, are doomed; Clement's-lane, the "Bond-street" of London in the days of the Stuarts, is vanishing rapidly, and not too soon; Yeates's or Yates's court, which led from Carey-street to Clement's Inn Gardens, is in process of demolition; the watch-house and stocks which stood at the western angle of Carey-street were removed some sixty years ago, and the street in which at one time only one lawyer dwelt, Sir William Blackstone, is now given over to his successors in the profession which he so greatly helped to honour and exalt.

THE WORKING OF THE PUBLIC HEALTH ACT.

It is a gratifying sign of the progress in sanitary improvement to find an example of the real efficiency of the working of the Public Health Act, 1875; and it is clear from this particular instance that if Local Authorities will vigorously enforce this statute the sanitary condition of our towns will be more rapidly improved than we could have expected. The example which we refer to is to be found in the current number of the Law Reports, Queen's Bench Division, vol. xi., p. 191, in the case of *ex parte* Saunders. The case itself really requires very little comment, for it stands out plain and clear. The 94th section of the Public Health Act enacts that the Local Authority shall, if satisfied of the existence of a nuisance, serve a notice on the person by whose act, default, or sufferance it arises or continues, and it then proceeds to deal with cases where the person causing the nnisance cannot be served, and so forth. Then the following section states that, if the person on whom a notice to abate a nuisance has been served fails to comply with the requisitions within the time specified, or if the nuisance, though abated, is likely to recur, a summons may be issued against the person who was served with the notice. Next, the 96th section enacts that the court may make an order on this person requiring him to comply with the order to abate the nuisance or to do any works necessary for this purpose under penalty.

In the present instance an order under the 94th section was made on certain persons in the town of Taunton, and by it they were directed to remove a closet from the centre of the house and place it near an outer wall where there might be efficient ventilation, and also to fix the soil-pipe outside the walls and carry it up above the eaves and cap it with a ventilating cowl. The notice further specified that the drains were to be well examined, if necessary relaid with stoneware pipes, and the joints made with cement covered with clay. The flushing arrangements were also to be re-arranged, and a waste-water preventer placed where necessary.

We give these details somewhat fully, because they appear to be an example of a thorough carrying out of the Public Health Act, and not a mere formal compliance with its provisions, and to show a praiseworthy determination on the part of the Local Authority at Taunton to take care of the health of the community, which might be well followed at other places. The persons served complied with some of the requisitions, but did not remove the closet, and a complaint was accordingly lodged against them under the 95th section, and the justices made an order that, as the nuisance was likely to recur, the water-closet, soil-pipe, and drains should be removed within fourteen days from the centre of the house, and that the other terms of the notice should be complied with.

Here again the justices appear to have acted with a vigour, common sense, and promptitude, which, we fear, would not be found everywhere in England. It was not very wonderful that the case was appealed, and, on the whole, it is satisfactory that this course was taken, for it has given both more publicity to the case, and has been the cause of an authoritative decision of the High Court of Justice, who upheld the decision of the justices. "I should have thought," said Mr. Justice Cave, in his judgment, "that, upon the terms of the section, it was as clear as could be that they, the justices, had jurisdiction to make the order." Again, Mr. Justice Smith concludes his judgment by saying, "It seems to me that this order is clearly within the terms of the Act." It is true that in some respects this decision is a little difficult to reconcile with that of *ex parte* Whitmarsh, decided in 1881, in which the justices ordered a person to fill up an ash-pit, abandon a certain privy, and to construct a proper and sufficient pail-closet in lieu thereof, and the High Court held that the justices had no power to order the erection of a particular closet, but merely to order that the nuisance should be abated, as Sect. 35 dealt with the erection of particular things. "But," said the judges in *ex parte* Saunders, "the previous decision is distinguishable, because there the judges made an order to erect a particular kind of closet. Here the order is not for the erection of a particular kind of closet where no closet existed before, but, there being already one, the order is for a removal to a place where it will not be a nuisance." Apart, however, from this distinction, it must be borne in mind that the words of the 96th section of the Public Health Act are to abate the nuisance within a time specified in the order, "and to do any works necessary for that purpose; or an order . . . . directing the execution of any works necessary to prevent the recurrence." Thus, in Whitmarsh's case, we confess the directing of the erection of a particular kind of closet seems to be a work necessary to prevent the recurrence of a nuisance; for what would be the use of abating the nuisance in one place for it to appear in another place or another form, where it would again recur, and again be abated, and so on *ad infinitum?* It is true that, under Section 36, fresh proceedings to enforce sufficient privy accommodation can be taken, thus carrying out the same purpose in a different manner; but the multiplication of proceedings can benefit no one. Thus, though we are willing to consider the distinction between the two cases we have referred to to be sound in law, we have no dislike to consider the previous case of *ex parte* Whitmarsh not only considerably lessened in authority, but on the high-road to be overruled. At any rate, the recent decision of the Taunton magistrates and of the Queen's Bench Division shows how efficacious the provisions of the Public Health Act of 1875 may be made if they are worked with proper vigour and attention by Local Authorities.

The Makers of the "Otto" Gas Engine, Messrs. Crossley Bros., Limited, whose names have become almost universally known, have removed their works to Openshaw, near Manchester.

SOME RECENT FOREIGN WORKS ON HYGIENE.*

As an important branch of hygiene the question of ventilation has largely occupied the attention of the specialist. How are we to ensure by ventilation a renewal of the air we breathe, rendered impure by the presence of carbonic acid and the consequent diminution of its vivifying oxygen? At what point does this air become dangerous to breathe is a question which has been submitted to much inquiry. We are all, without the aid of science, capable of ascertaining when the air of a room has become "close." Some authorities would have it that this condition, so familiar to every one, is the result not alone of the exhaustion of the oxygen in the atmosphere, but is largely produced by a somewhat mysterious and very foul-smelling substance exhaled by the human lungs, and which, submitted to chemical action, reveals the presence of ammonia.

It is generally admitted, however, that it is the presence of an excess of carbonic acid which is so noxious in the air we breathe, though scientific experiment would tend to prove that the injurious action of carbonic acid has been somewhat exaggerated. It is oxide of carbon which is shown to constitute the really harmful element of exhausted air, the same baleful poison given off by a red-hot cast-iron stove, and present in large quantities in ill-prepared coal-gas. So fatal are its effects that the experiments of Leblanc—quoted by M. Radau—show us a dog asphyxiated in an atmosphere composed of 3 per cent. of carbonic acid and only ½ per cent. of oxide of carbon, while the same animal was able to bear as much as 20 per cent. of carbonic acid when administered alone.

Though scientifically this is known to be the case, it is generally admitted that the impurity of the air may be measured by the amount of carbonic acid it contains.† What may be the limit of its presence in the air so as not to endanger life is a point far from satisfactorily settled, and, of course, largely dependent on very varying conditions. When we take the theoretical position of a hermetically closed space, the presence of as little as even 1-1000th of carbonic acid in the atmosphere may be taken as the extreme limit; taking this basis,—given by M. Radau,—and allowing with him that the carbonic acid exhaled from the lungs is about 20 litres an hour, the volume of air which must for comfort be supplied to each person every hour is 33 cubic mètres or yards, and more than this will be necessary where there are candles or lamps, which each consume as much oxygen as a human being; though, it is true, not giving off carbonic acid. This condition of a hermetically-sealed room is, however, impossible, though it is surprising how nearly this theoretical position seems to be attained in certain assembly-rooms, concert-halls, theatres, and even private houses. The period at which the air of an enclosed space becomes unhealthily vitiated is, of course, largely dependent upon the size of that space, a factor also in the question of its ventilation; for a same influx of air will naturally affect in a less perceptible and inconvenient manner a large space than a small, while the larger space will necessarily require less frequent renewal of its atmosphere, — a point of some importance if we are to accept the opinion of M. Putzey, who objects to the introduction of air into large halls at more frequent intervals than three times an hour. Ventilation, of course, being very different from mere draught, its management requires the utmost consideration. That open windows produce in hospitals sufficient ventilation would appear to be an error. In all places intended for the reception of large numbers of individuals, lecture-rooms, theatres, barracks, and so forth, artificial ventilation must perforce be resorted to; one of its chief advantages lying in the fact that by its means an equable temperature can be obtained both in winter and summer, in the former case by the admission of warm air, in the latter by the introduction of air obtained from the cellars.

Provided, however, that the space be not too small the natural ventilation of open windows and fire-places is sufficient. Leblanc urged forty years ago, as the result of his experi-

* See p. 175, *ante*.

† The presence of carbonic acid is easily detected by placing in the room a saucer of clear lime water. At the end of a short time a thin white film is formed on the surface of the liquid, consisting of carbonate of lime.

ments, that 50 cubic mètres or yards per head are absolutely necessary in all dormitories. Yet in France the law prescribes 16 mètres per head in the barracks, in England we allow 17, in Germany 18, the Paris *conseil de salubrité*, in a recently-published report, urging 20 as the mean. In Paris the mean cubic amount of air for each hospital patient is 43 mètres, we in London allowing 42 mètres.*

M. Bouchardot gives some curious details respecting the Paris and London hospitals. The Hôpital Lariboisière is ventilated by artificial means, yet strange to say it is not found that the death-rate is less than in the other Paris hospitals. M. Bouchardot speaks in terms of great praise of the simple yet effective system of ventilation in vogue in our London hospitals, which, by open fireplaces, succeed in obtaining a constant renewal of the air, while affording to the patients a pleasant amusement. M. Proust, in his "Traité d'Hygiène" (Paris, 1881), is, however, somewhat opposed to this as excessive. "The importance of pure air," he writes, "has, perhaps, been exaggerated in certain cases by the English doctors and the Americans who have followed their example. They say, leave open the windows of all dormitories, barracks, and sleeping-rooms, day and night, winter and summer. This precept, followed largely in England and America, presents in our opinion great inconveniences." Such is the view of an eminent hygienist. Who shall decide when doctors disagree? Yet it seems difficult to admit the possibility of the harmful consequences of an overdose of pure air. These disagreements simply serve to show how unsettled are as yet the very laws of the modern science of hygiene still in its infancy. Fortunately, the subject has at length aroused the attention of the ruling authorities, who in every direction are displaying most praiseworthy activity. In our own country, Parliament, so constantly abused for its inefficiency in dealing with home questions, has, nevertheless, succeeded in passing of late years many important Bills regulating the sanitary affairs of our great cities, though it is sad to reflect how many more Bills still remain to be considered. In Paris, an equal activity has been displayed by the authorities. In one direction, the regulations respecting the erection of new houses, —we learn from MM. Napias and Martin, whose excellent "Etude et le Progrès de l'Hygiène en France," between the years 1878 and 1882, is worthy of attention,—have been recognised to be far from perfect, and a new series of regulations is being prepared. The height of the houses will, it appears, be even more than is the case at present, proportioned to the width of the street or thoroughfare on which they stand, the minimum elevation of the stories will be fixed, and many other points which, previously laid down, have been reconsidered in their relation to the modern exactions of the science of hygiene.

The examples of Paris and London are already being followed largely in other great cities. The vast agglomerations of human beings who now pour into the centres of population urgently demand the immediate application of the principles advocated by the hygienists, who, if they may differ in questions of detail, are unanimous in counselling humanity at large to "live cleanly." Aided by the artist who, working with his scientific brother, will make the world beautiful, we may yet look forward without despair to the possibility of at length realising what till now has been regarded as the perfection only of Utopia.†

Chester Cathedral.—The Dean of Chester has decided, after a pause of six years, to endeavour to complete the restoration of Chester Cathedral, under the advice of Mr. A. W. Blomfield, M.A., who was appointed architect of the cathedral in succession to the late Sir Gilbert Scott. Dean Howson makes an appeal for 15,000*l.* for the execution of the work, which he proposes to spread over three years. The sum of 1,800*l.* is wanted for works requiring immediate attention. Mrs. Platt, Stalybridge, has already contributed 2,000*l.* towards the erection of certain mosaics in the cathedral.

* See Bouchardot, "Traité d'Hygiène Publique et Privée." Paris: 1883.

† Among other foreign books mention should not be neglected of Dr. Riant's admirable little work on the "Hygiène of the Work-room and the Study," *Hygiène du Cabinet de Travail* (Paris, 1883), to which, at a later date, we may have occasion to refer.

SIR ROBERT RAWLINSON.

We hear with extreme personal gratification that H.M. the Queen is about to confer the honour of knighthood on Mr. Robert Rawlinson, C.B., the chief Engineering Inspector of the Local Government Board. Mr. Rawlinson's career has been a remarkable one, and greatly to his credit. He has worked his way from the mason's "banker," and never fails to say so at times when the statement may serve as an encouragement to others. From the time that he first came to London, now many years ago, we have seen this progress, and have had pleasure in recognising it at times when there were objectors in the way.

Mr. Rawlinson was appointed an engineering inspector under the first Public Health Act, 1848, Lord Morpeth, Lord Ashley, and Mr. Edwin Chadwick, C.B., being commissioners. Mr. Rawlinson held the first inquiry and wrote the first report (Dover). Subsequently he visited, inspected, and reported upon the principal towns in England, from Berwick-upon-Tweed to Penzance, from Liverpool to Scarborough. He drew up suggestions for the use of local surveyors and sanitary engineers as to main sewering, house draining, water supply, and sewage irrigation. These suggestions have, from time to time, been extended, and diagram plans of details of main sewers and reservoirs added, so as to be suitable not only for Great Britain, but also for British India and the colonies. These suggestions and plans, many of which have been published in the columns of the *Builder*, have been accepted by English engineers, and also by engineers on the Continent. In the spring of 1855 Mr. Rawlinson was sent as engineer member of the Sanitary Commission to the British Army on the Bosphorus and in the Crimea. In 1863 he was sent by the Home Secretary to Lancashire as Engineer Commissioner, to devise "work for wages" in the distressed cotton district during the cotton famine, and with Mr. Arthur Arnold, who was his colleague, advised and saw executed in the ninety-four towns and places in Lancashire and Cheshire works of road-making, public parks making, waterworks construction, street and road forming, main sewering, and land draining. The sum of money expended under the signature of Mr. Rawlinson was 1,850,000*l.*, upwards of 400 miles of roads and streets were formed, drained, sewered, channelled, and paved, the manual labour being done, for the most part, by cotton operatives. The administration did not cost the Government 3s. 6d. per cent. The money was advanced for a period of thirty years at 3½ per cent. The entire sum advanced has, up to this date, been regularly repaid. Mr. Rawlinson has served on three Royal Commissions in England and on one for Dublin, and since 1862 has been a member of the Army Sanitary Committee. In 1862 he reported on Windsor Castle, and subsequently upon Sandringham and Marlborough House for the Prince of Wales. At present Mr. Rawlinson is a member of the Council of the Institution of Civil Engineers, and a vice-president of the Society of Arts.

While offering him our hearty congratulations, we cannot but regret the tardiness with which this honour has been conferred upon him. We trust he may live many years yet to enjoy his distinction, coupled as that enjoyment must be with the consciousness of having faithfully performed his duties no less as a public servant than as a citizen.

Presiding at the Crystal Palace Engineering School on Saturday, Mr. Rawlinson, in presenting the certificates to successful students, said it gave him great pleasure to meet his young friends, who were entering upon a profession that had been to himself a source of pleasure and delight during the whole course of his life. In his time, great things had been accomplished by engineers as the pioneers of civilisation, in the construction of roads, railways, docks, bridges, shipping, and other works. He was present at the opening of the beginning of one of our greatest railway systems,—the Liverpool and Manchester line,—and had lived to see the benefits of railways extended to all parts of the civilised world. When he entered on his profession he thought, as they did probably, that he was too late, that the work of the engineer was finished: that was a mistake, great progress had been made, but the world was not yet completed, and there was a vast field open for them. There was still very much to do, and it was such as they that would have to do it. They must ever bear in mind that there was no royal road to success, and their living useful and pure lives, achieving and sustaining a good reputation for themselves and their country, depended upon the use they made of their opportunities and advantages. They had in this school the means of laying an excellent foundation for a useful and successful future career. His experience in colonial and other work enabled him to say that they would find it of the utmost importance, as engineers, to be able to turn their hand to anything, and what their hand found to do let them do it, and not be too nice or hesitating in the matter of choice. The branch of engineering with which he was connected had come to him rather than that he had gone to it. He had early in life a desire to acquire as much and varied practical ability as possible. His father had been a working-man, and he had been a working-man himself, first a stone-mason, and afterwards a bricklayer, a sawyer, a blacksmith, and an engineer. When a very young man he served under one of the most eminent engineers of his time, Jesse Hartley, at the Liverpool Docks, and afterwards occupied the same position as Brindley in connexion with our first canals. In 1855, he went out to the Crimea as sanitary engineer. The mortality among the troops, from the ignorance and inability of soldiers and generals to design and execute necessary works, was dreadful, 10,000 out of 33,000 men perishing from preventible causes. The following year things were much improved; the French had 40,000 cases of typhus fever, and we had not one! His (Mr. Rawlinson's) position now was that of Chief Sanitary Engineer for the Government of Great Britain, which he was by following the line into which he had been pushed. His young friends had entered upon a noble profession, he counselled them to do their duty now and in the future; to enter upon any sphere of usefulness open to them; and to command and reflect honour and trust upon themselves, their connexions, and their country, using their lives and ending their days with a deservedly good reputation.

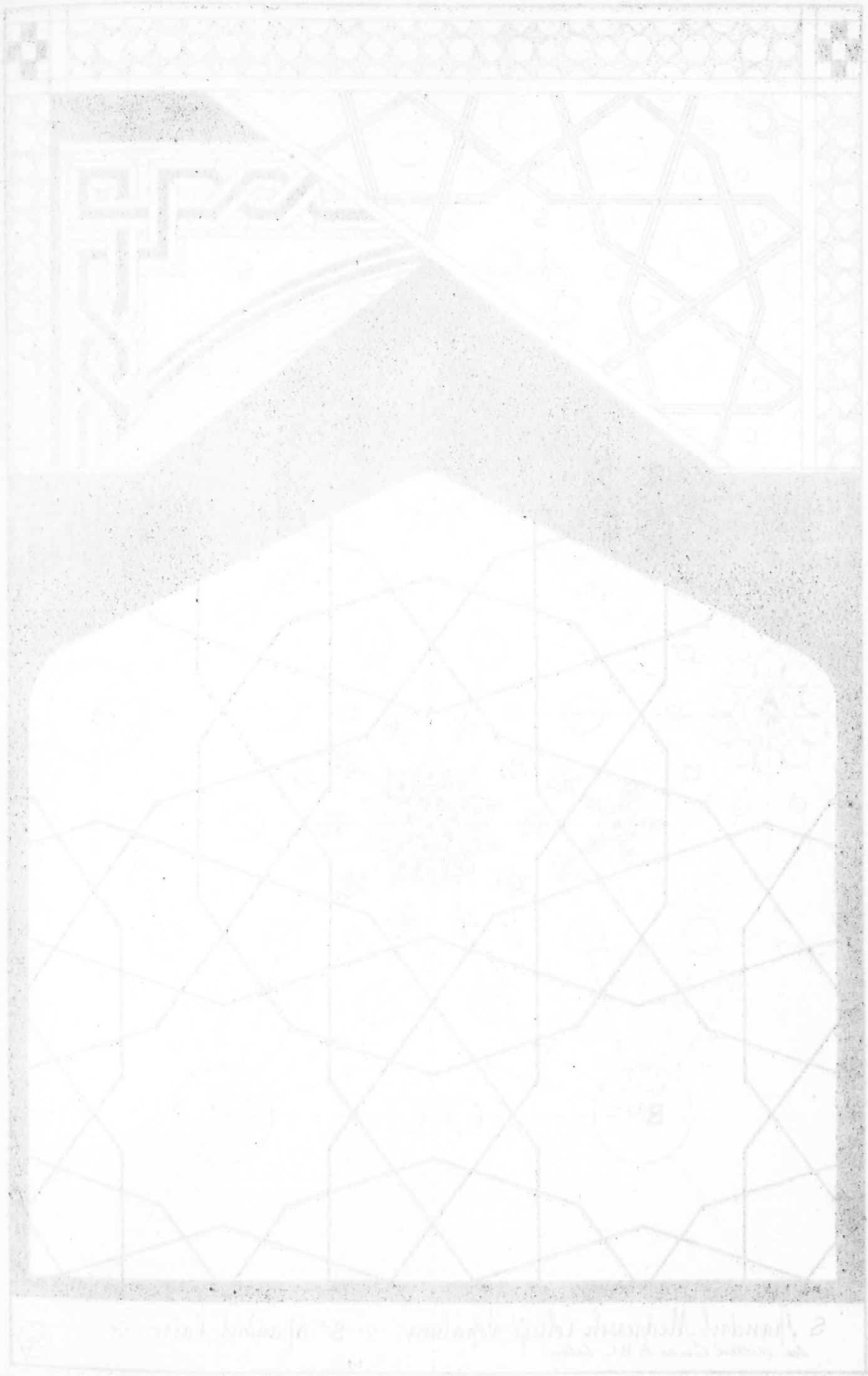
SARACENIC DESIGN.

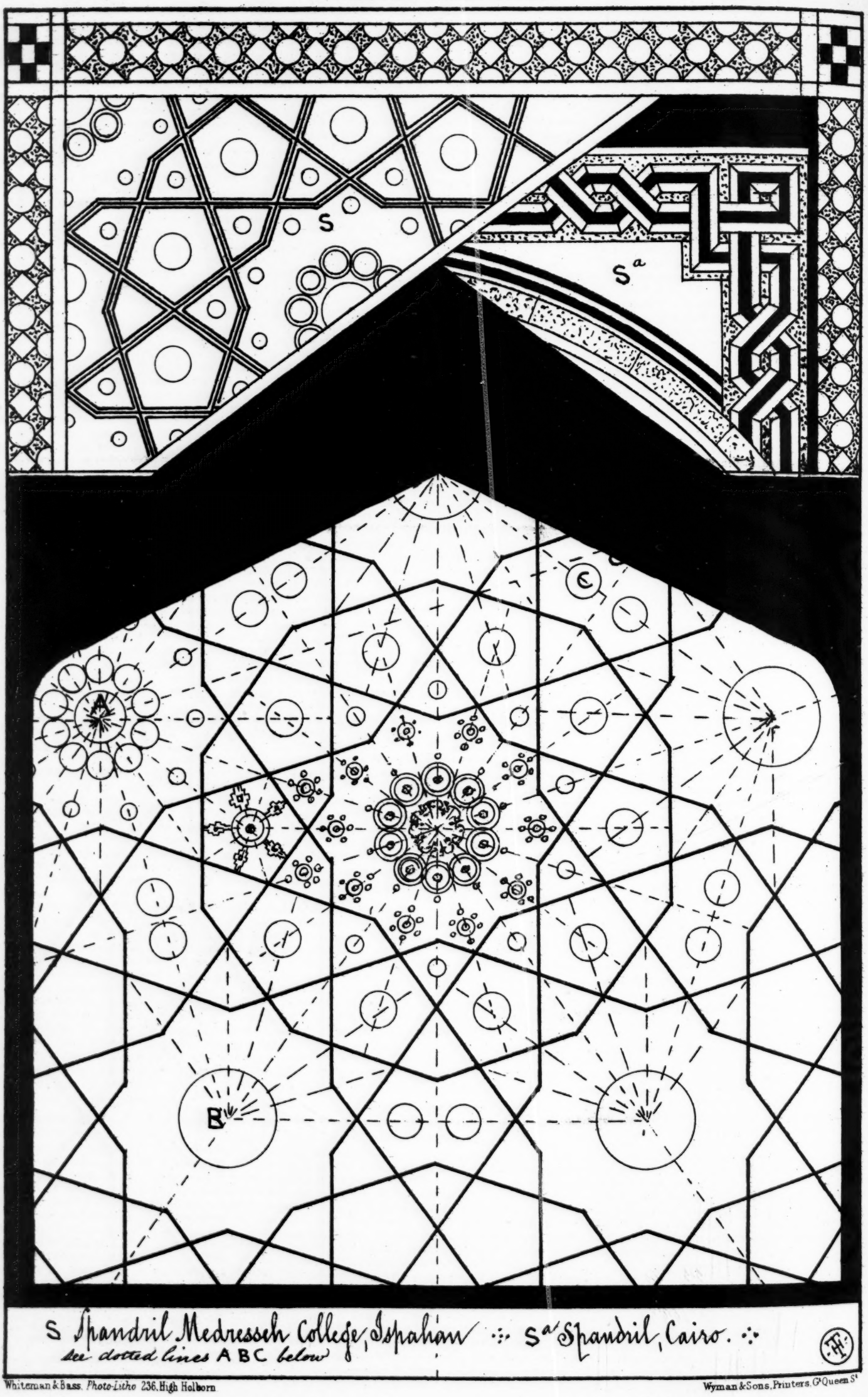
The illustration shows that it was not the Japanese only who avoided centres and centre lines in setting out ornament, but that Persians and Arabs were equally conscious of the pleasing and very piquant effect of accidental arrangement. When, however, examples are examined they are nearly always found to be a section, or part, of a perfect geometrical design,—see A, B, C, and S. To some Western eyes, Oriental examples of this principle create a surprise, which is more or less pleasing on account of its novelty.

The example from Ispahan is formed of highly-glazed richly-coloured tiles, of square form, a very small portion of the general design occurring on each tile. The general ground is pale orange-yellow, the tracery in black lines, the ornament white and darkish blue. Where rich marbles do not occur, the whole building is faced with tiles of richest hues, producing perfect harmony. The arches below the spandrel are somewhat acutely pointed, having straight lines instead of curves for the greater part of their extent, except at the spring, where are curves of small radius. They remind us very much of later work in England, and suggest the indebtedness of Northern architects to the East for many of their ideas. The ornament is only slightly indicated in the illustration. The spandrel from Cairo has a centre of red porphyry and black and white border, which a Western draughtsman would certainly have continued all round.

Perhaps an occasional departure (and it was only occasional in the East) from our rigid adherence to centering in design might at least aid in producing novelty,—generally a pleasing effect.

Merry Men All.—The *employés* of Messrs. Clark, Bunnett, & Co., Limited, had their annual dinner on Saturday, August 4th, the men of the New Cross Works proceeding to Farnborough, in Kent; the men of the New York Works to Spuyten Duyvil, on the Hudson River; and the men of the Paris Works to Bougival, on the Seine.





S Spandril Medresseh College, Ispahan ·:· Sa Spandril, Cairo. ·:·
see dotted lines A B C below

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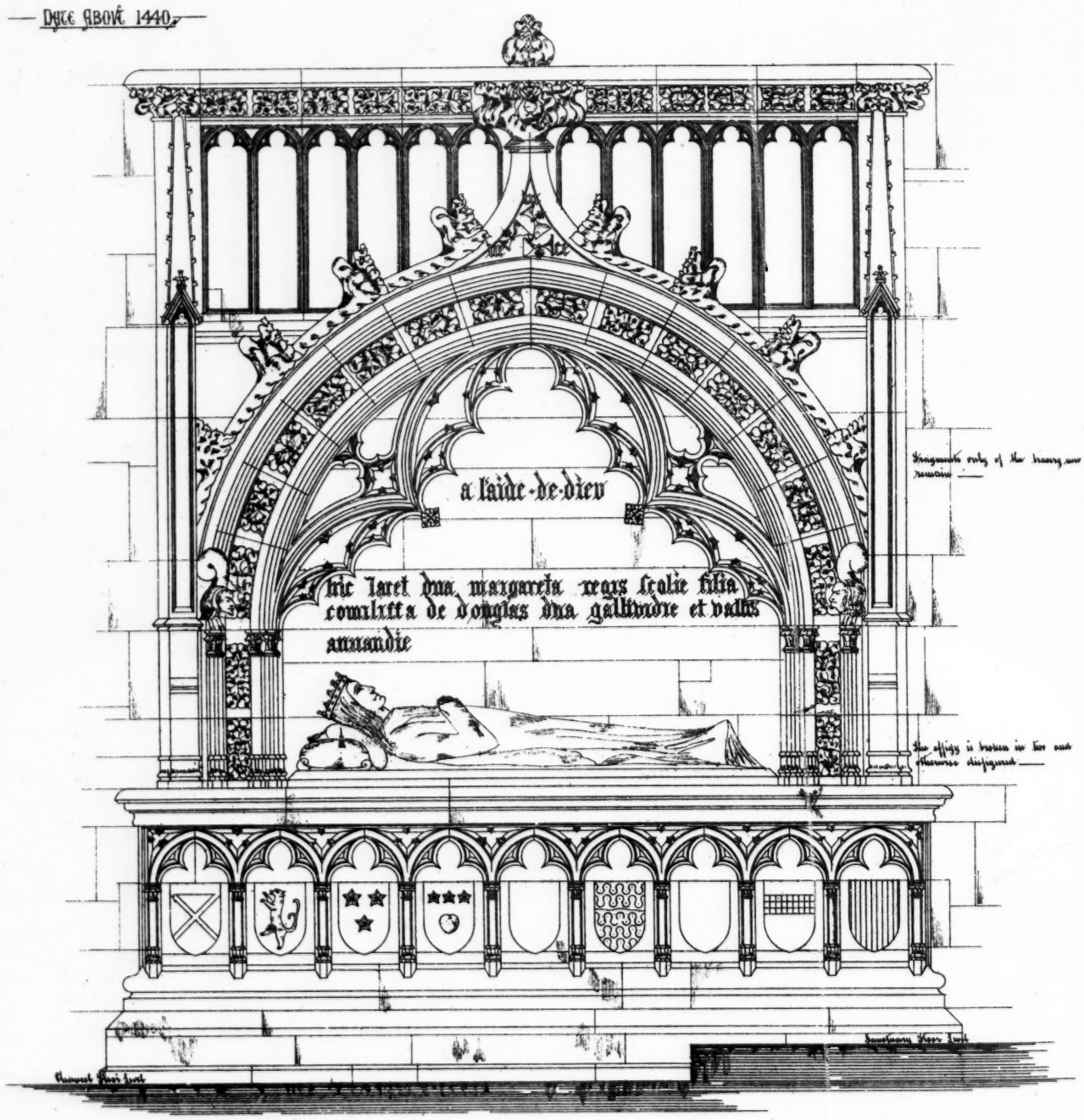
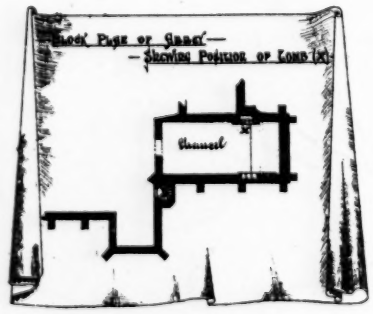
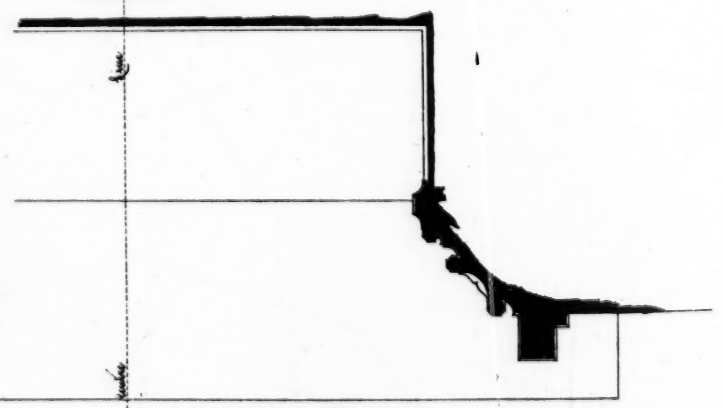
TOMB OF THE PRINCESS MARGARET

LINCLUDEN ABBEY

Date above 1440.







ELEVATION

HALF PLAN THE SHAFTS

SCALE

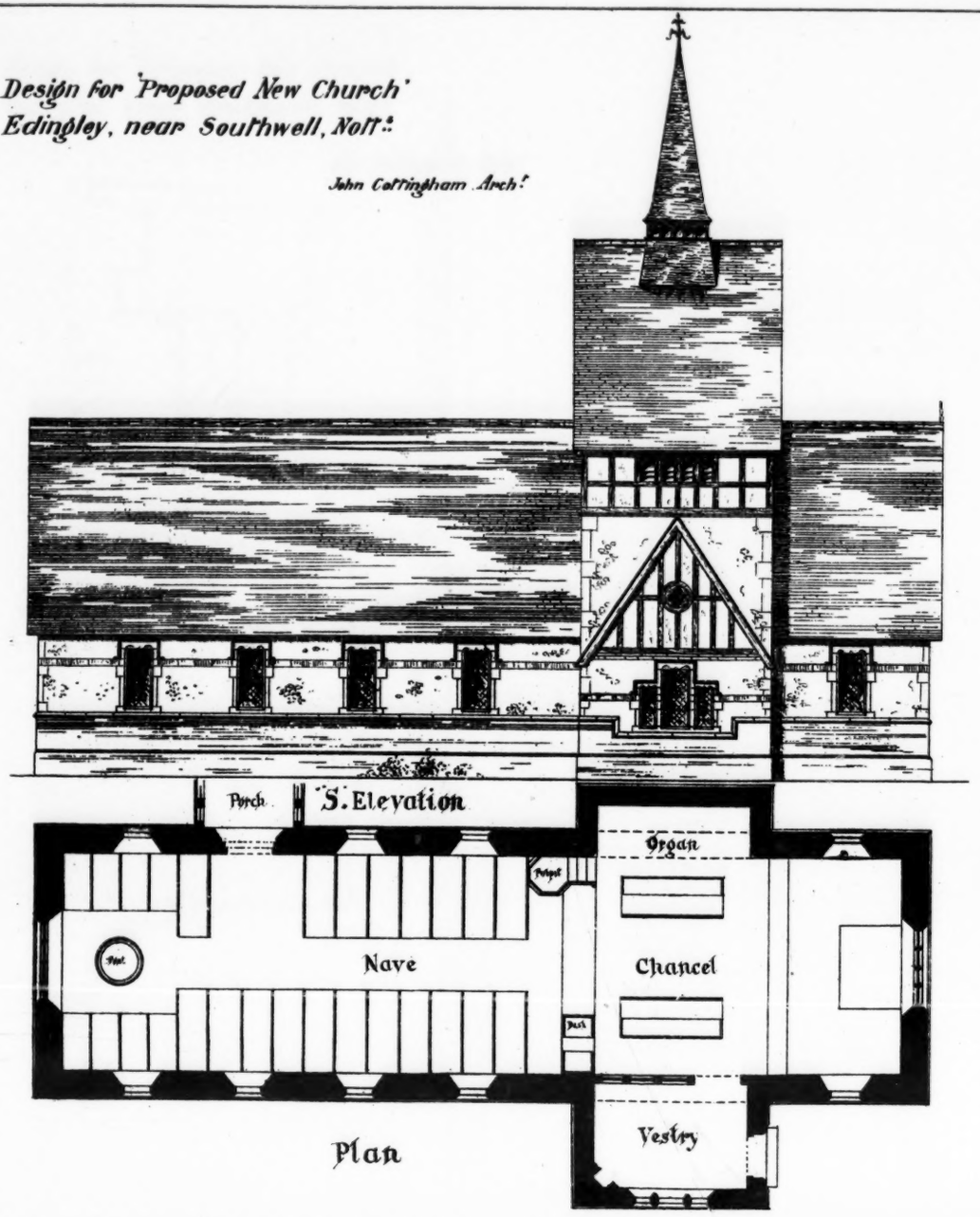
Measured and Drawn by
S. Glover Anderson Jan. 1883.

Whiteman & Bass, *Photo-Litho* 236, High Holborn

Wyman & Sons, Printers, Gt Queen St

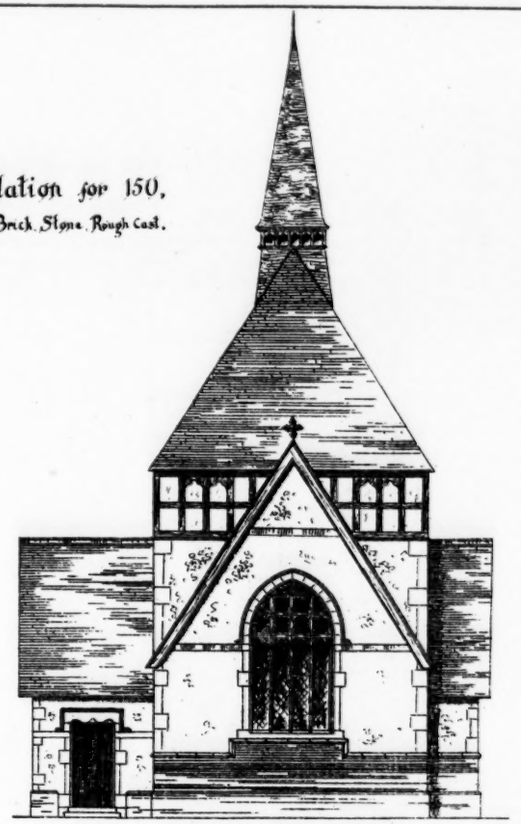
Design for 'Proposed New Church'
Edingley, near Southwell, Notts.

John Cottingham Arch.t

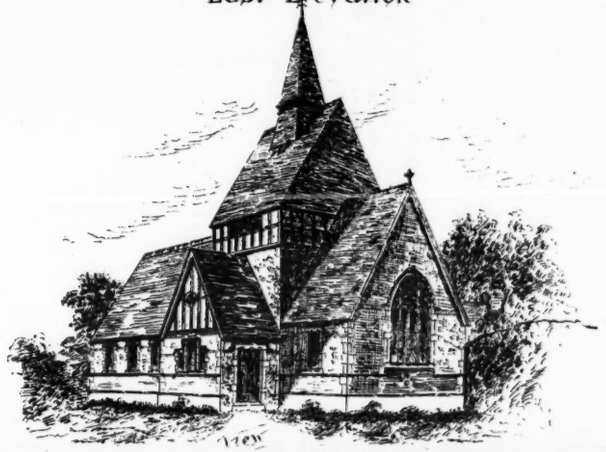


Plan

Accommodation for 150.
Materials. Brick. Stone. Rough Cast.



East Elevation



Whiteman & Bass, *Photo-Litho* 236, High Holborn.

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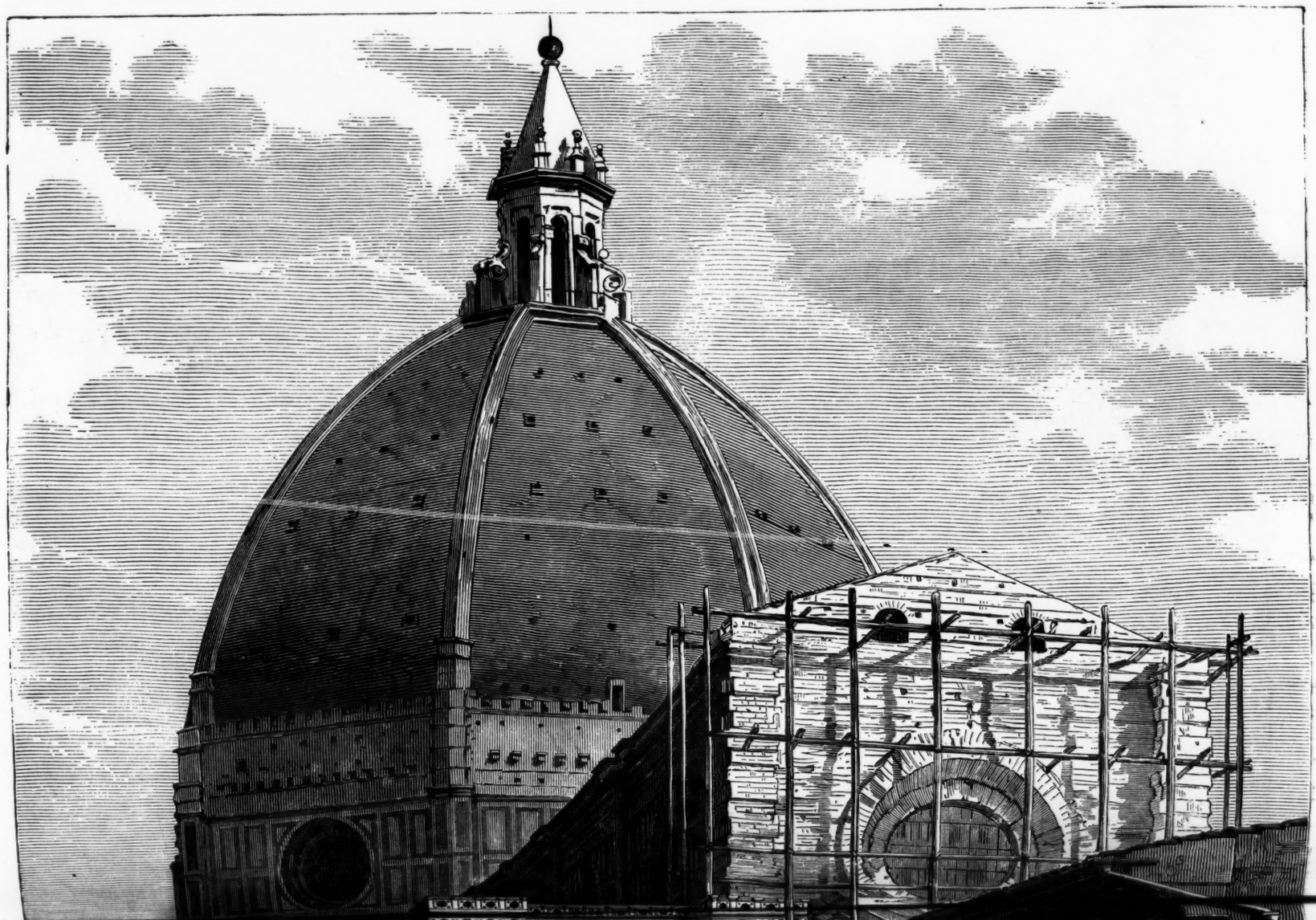
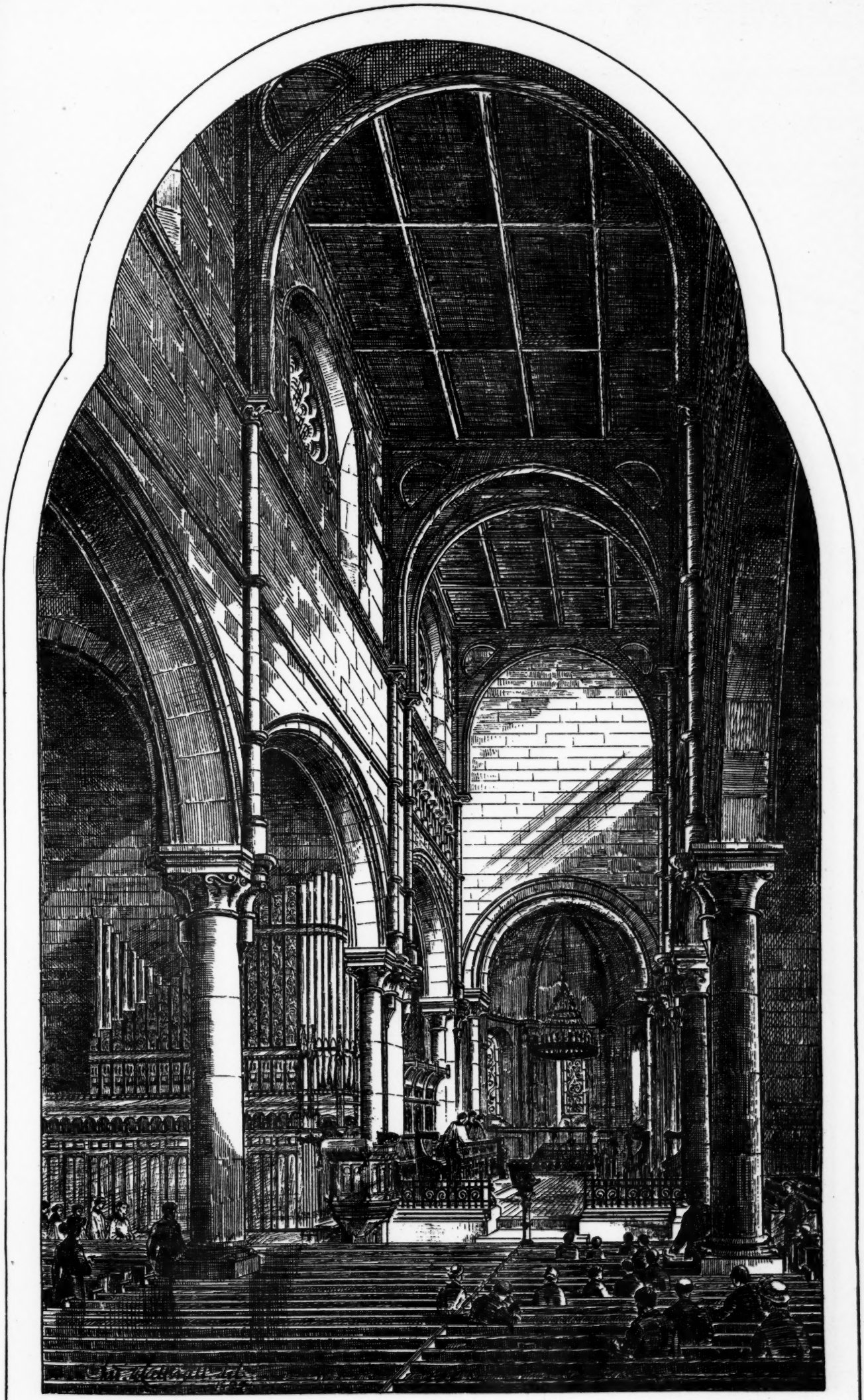


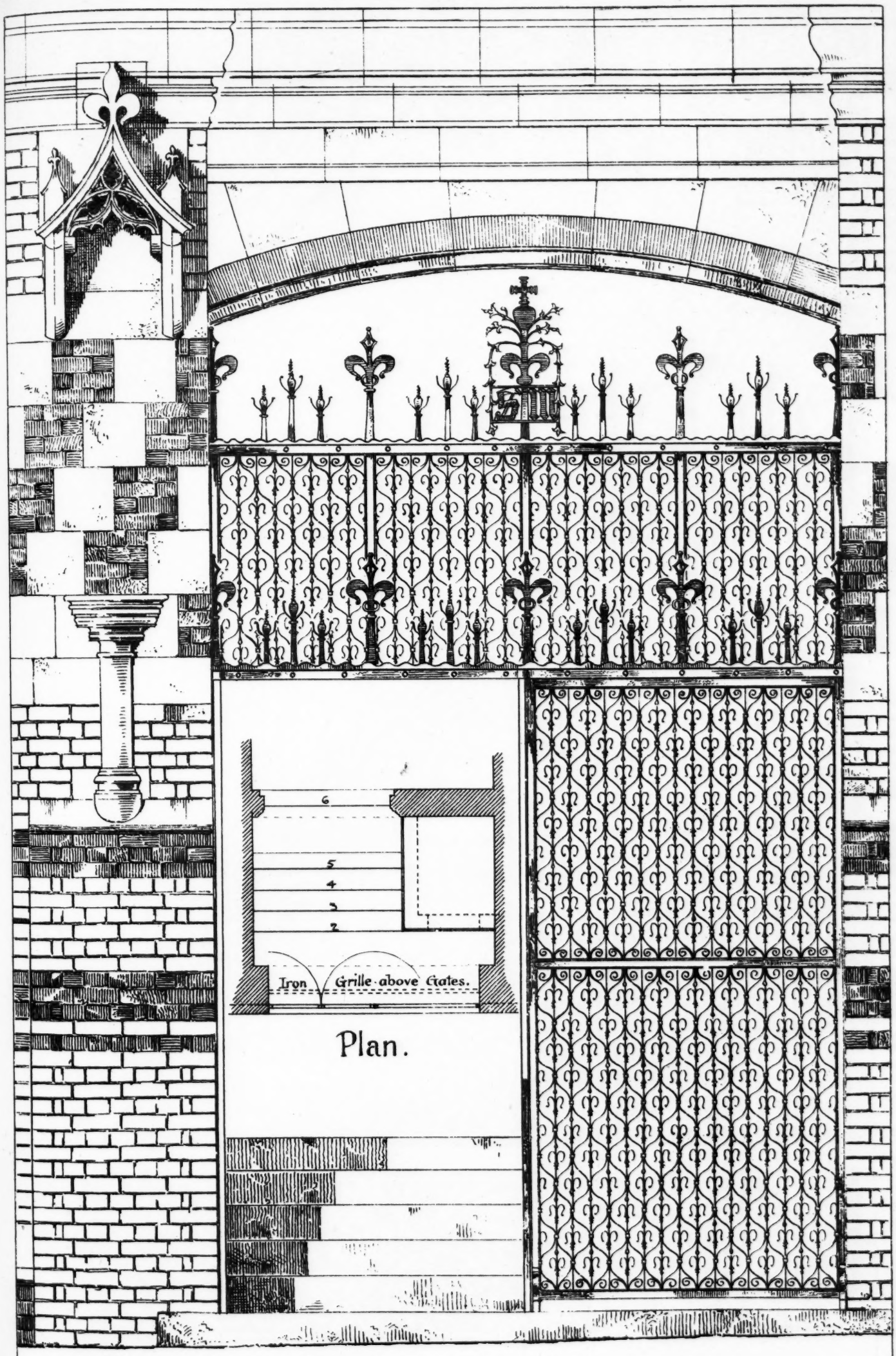
THE NEWLY-CONSTRUCTED PORTION OF THE FAÇADE AT SANTA MARIA DEL FIORE, FLORENCE.

Prof. De Fabris, Architect.



Whiteman & Bass, *Photo-Litho* Wyman & Sons, Printers.

ST. GEORGE'S CHURCH, PRESTON.——Messrs. Garlick, Park, & Sykes, Architects.



Plan.

Entrance to Finsbury Hospital. *J.D.Sedding, Arch^t.*

Thos. Garratt. del. '83.

C.F.Kell, Photo-Litho. Castle St Holborn, London, E.C.

Wyman & Sons, Printers, G^t Queen S^t

Whiteman & Bass, *Photo-Litho* 236, High Holborn.

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FILLING-IN AND BORDER.——Designed by Geo. C. Haité.

TOMB OF THE PRINCESS MARGARET, LINCLUDEN ABBEY, DUMFRIES.

The tomb of the Princess Margaret, daughter of Robert III., King of Scotland, forms one of the principal and best preserved features of the Abbey of Lincluden, a ruined religious house, interesting to all visitors to the "Land of Burns," alike from its charming situation at the "meeting of the waters" of Cluden and Nith, and its associations with the "Ploughman Bard" in his "Vision of Liberty" and other poems.

The chancel has been termed "an architectural gem" by no less an authority than Mr. M. Holbeche Bloxam, and the tomb, which is situated on its north side, is certainly quite worthy of its surroundings: like the rest of the buildings, it is formed of the local red sandstone, and although it has for at least two centuries been exposed to the fierce south-easterly rain storms there prevalent, the mouldings and carved work, where unharmed by the rustic visitors, are still sharp and clear.

The royal occupant of the tomb being the wife of Archibald, fourth Earl of Douglas, the armorial bearings relate principally to that family. The spandrel at the apex of the arch and hood moulds,—as may be seen from the drawing,—contains three chalices with mullet-shaped star attached to each, surrounding a heart,—the leading emblem of the house since the time of the "Good Sir James," who died while conveying the heart of Bruce to Palestine. The original symbol of the family,—the St. Andrew's cross and stars, may be seen on one of the shields on the base, another containing the same bearing with the heart added, while four others show the family arms, as Lords of Douglas, Galloway, Annandale, and Eskdale. Two of the shields remain blank.

At the back of the recess the inscription is cut, as shown, running as follows:—"A l'Aide de Dieu! Hic jacet Dna. Margareta Regis Scotiæ Filia, quodam Comtissa de Douglas, Dna. Gallovidæ et Vallis Annandiæ."

"Here lies Lady Margaret, daughter of the King of Scotland, Countess of Douglas, and Lady of Galloway and Annandale."

Our photo-lithograph is from a drawing by Mr. J. Glover-Anderson.

PROPOSED EDINGLEY CHURCH.

The present unsightly building at Edingley (an out-of-the-way village in Nottinghamshire), used as a place of worship, is, like many more country churches in the shire, a mere "white-washed hovel." The proposed new edifice is simple in construction and design, and of a picturesque character, in harmony with the natural beauty of the neighbourhood. The materials would be Bulwell bricks and Mansfield stone dressings, with rough-cast in the tower and vestry. Edingley being a very poor parish, it is feared some time may elapse before the work of rebuilding can commence. Accommodation is provided for 150 persons. Mr. John Cottingham is the architect.

FLORENCE CATHEDRAL AND ITS NEW FAÇADE.

Florence Cathedral, or "il Duomo di Santa Maria del Fiore" (so-called from the lily which figures in the arms of Florence), was erected in 1294 to 1462, on the site of the earlier Church of Santa Reparata. According to Villani, the Florentines had, at an early period, determined to erect in their city a monument which should surpass all that had preceded it. This imposing example of Italian Gothic was designed by Arnolfo del Cambio, to whom the execution was confided by a decree in 1294, and the foundations were laid on the day of the Feast of the Nativity, 1298, and the name of Santa Maria del Fiore given to it. Arnolfo del Cambio superintended the work down to his death, in 1310, when the work stopped, until Giotto (who acted as architect-in-chief for thirty-three months) was requested to continue it in 1331, with an order that he should remain as a resident in Florence to ensure its progress. He erected the bell-tower and the façade of the cathedral, which he carried up to two-thirds of its height. Amongst the other eminent architects who were employed after Giotto, and until the completion of the church was entrusted to Brunelleschi, the names of Francesco Talenti, Alberto di Arnoldo, Taddeo Gaddi, Andrea Orcagna (a man of extraordinary powers, as his loggia in the Piazza Gran Duca amply testifies), and Filippo di Lorenzo are mentioned. The nave and aisles were completed in 1355.

On August 19th, 1418, the public competition for models for the dome was announced, of which Vasari has given so racy an account, and in which the genius of Filippo Brunelleschi secured the victory, in spite of the jealousy of rivals, and the doubts of the *cognoscenti*. The construction of the cupola took up fourteen years (1420—1434). The church was finally consecrated in 1436, but the lantern on the top of the dome, also designed by Brunelleschi,—according to another source, his plans for it were lost,—was not completed until 1462. The whole length of the building is 500 ft.; its height from the pavement to the summit of the cross is 387 ft. The transepts and cross are nearly 306 ft. long; the width of the nave and aisles is 128 ft.; the height of the nave, 153 ft.; that of the side aisles, 96 ft. 6 in. The nave was intended by Arnolfo del Cambio to consist of five bays or arches; but as the families of the Falconieri and the Bischieri refused to give up some buildings on the east required for the choir, that architect was compelled to reduce its length, so as to include only four. Brunelleschi's cupola is octagonal, and is 138 ft. 6 in. in diameter at its base, and from the cornice of the drum to the eye of the dome the height is 133 ft. 3 in. No wonder that the Florentine citizens who formed the building committee refused at first to believe in the practicability of Brunelleschi's scheme. No such dimensions had previously been attempted. The domes of St. Mark at Venice and of Pisa Cathedral are far below it in dimensions, grandeur, and simplicity of construction. It served as a model for that of St. Peter's to Michelangelo, whose admiration of it was so great that he used to say, "*Come te non voglio, meglio di te non posso.*" The cupola is the largest dome in the world, for though the summit of the cross of St. Peter's is a greater distance from the ground than the summit of the cross on Florence Cathedral (in consequence of the greater dimensions of the whole building), yet, dome compared with dome, that of Brunelleschi is the higher. The Florentine dome has also a greater circumference. It is, too, the first cupola that was ever raised upon a "drum," and the first double dome that was ever built. It exceeds in elevation what Arnolfo had designed; for, according to the original plan, the dome was to have sprung immediately from the arches and piers on which, in fact, it rests. But Brunelleschi carried up perpendicular walls in the shape of an octagon to a certain height, and, placing the dome upon these walls, secured for it the elevation which he desired.

The illustration which we present with this week's issue, besides supplying a view of that part of the façade which has been reconstructed, also furnishes an excellent opportunity for comparing the grand dimensions of the dome with the rest of the building. It seems a pity, however, that such a work of art should be so crowded round with buildings; but regrets will not alter that stubborn failing of human nature which leads to the making as much of a piece of ground as convenience will permit, and which appears to have descended from our forefathers in an even more highly developed form, for it is an open question whether ancient builders,—who, moreover, were often compelled by circumstances over which they had no control to make the most of the space at their disposal,—sinned more in this respect than their descendants do at the present day. But to return to the façade of Florence Cathedral. The façade was commenced by Arnolfo del Cambio, but in 1332 his successor Giotto designed a new and more imposing front (of which copies still exist in the cloisters of San Marco, Florence), and executed one half of it himself. The façade,—which, as nearly the whole of the outer walls of the cathedral is entirely cased in marble,—subsisted till the sixteenth century, having been adorned with statues by the best masters, including Donatello, when in 1588 it was removed, or rather destroyed, by the Provveditore Benedetto Uguccione, for the purpose, as he professed, of re-erecting it in the then modern style. So eager was he to effect the demolition that, instead of carefully detaching the precious marbles, which might have been employed again, the facing was plucked off so hastily that, according to a contemporary, not a slab or column was left entire. The façade was to have been replaced by one designed by Buontalenti, Dosio, Cigoli, and others, but the project was not carried out. In 1636 another façade was begun, but the works were soon again suspended. The cathedral (like Santa Croce, San Lorenzo, &c.) was thus left without a façade, and was then decorated with frescoes by way of supplying the defect. A fresh attempt was made, in the reign of the last Grand Duke of Tuscany, to erect one after a design of the Cavaliere Matas, but nothing came of it. But the regeneration of Italy was to bring a remedy also in the case of Florence Cathedral. In April, 1860, King Victor Emmanuel laid the foundation stone of a new façade; the work, however, was not begun until the autumn of 1875. The design, of which we now show the completed portion, is by the architect De Fabris, whose work was selected after a most severe competition.

ST. GEORGE'S CHURCH, PRESTON.

It is proposed to reconstruct this church (with the exception of the outside walls, communion, and vestry). The view shows an entirely new nave and chancel. The estimated cost of the work is 5,000*l*. The architects are Messrs. Garlick, Park, & Sykes. Our illustration is reproduced from a drawing by Mr. Catterall.

WROUGHT-IRON SCREEN, LEONARD-SQUARE.

The accompanying drawing represents the wrought-iron screen and entrance-gates to the Children's Hospital, Leonard-square, Shoreditch. The screen is next the street, and protects the entrance to the house and a lift to the basement. The work is designed by Mr. Sedding, architect of the building, and executed by Messrs. Longden & Co., of Oxford-street, who deserve credit for the tasteful manner in which the work is carried out.

SURFACE DECORATION.

The enclosed filling-in and border is a severe treatment of the chrysanthemum adapted to suit the manufacturing process of "Lincrusta Walton," which has taken a place as a method of flat surface decoration.

Patterns for this process require a different handling and treatment than for printed work, as unlike coloured or raised flock papers, the pattern is pressed up in rounded relief. The nature of the petals, leaves, and growth of the chrysanthemum particularly recommend it for this purpose.

The chief feature of the Lincrusta is supposed to be the necessity for hand colouring when *in situ*. This is capable of very rich and satisfactory treatment when in the hands of an artist, but it is almost of necessity generally left to the house painter, or, at least, to the staff of the usual house decorator, with a result at once disagreeable and vulgar. The material in its own colour or bronzed is far more pleasing and satisfactory than when in colours, and for dados for halls and staircases particularly, while it may often be used with effect on ceilings and door-panels. It is a welcome and far from inartistic addition to the various methods of flat surface decoration.

THE BERLIN GALLERY OF SCULPTURE.

According to the *Vossische Zeitung*, a bronze statue from Kyzikus has been added to the collections of the above institution. It is unfortunately not in a complete state of preservation, the left leg and the right foot being wanting, as well as part of the upper portion of the figure. The search made for the missing portions has so far proved unsuccessful. Bronze statues of life size are rare, it is remarked, so that even in its fragmentary condition this work is considered an acquisition of some value. It is supposed to be of Grecian origin.

Amsterdam International Exhibition.—We are informed that Messrs. Priestman Bros. have been awarded a Diploma of Honour, being the highest award at this Exhibition, for their patent dredging, excavating, and elevating machinery.

DISCOVERY OF ROMAN REMAINS AT MAINZ.

Owing to extensive excavations for the new railway line which is to intersect the south-eastern outlying works of the citadel of Mainz, massive Roman buildings have been laid bare, the existence of which has never been suspected. The most remarkable features are three massive walls, two running parallel to each other, the third inclining towards the first, leaving only narrow passages between them. The middle wall consists of heavy square pillars, which, together with the arches, consisting of double layers of vaults, must have been isolated. It has not yet been discovered what purpose the remains served. Their construction is of a most solid nature, and no doubt supported heavy loads. As the remains are exactly in the line of the new railway, they must be completely removed. An exact survey of the whole and the separate parts will add, it is stated, considerably to what is known of Roman Mainz, the extent of which must have been far larger than was hitherto believed.

EDINBURGH.

It having been announced to the Board of Manufactures (which has the control of the Scottish National Gallery and Art-Classes) that "a gentleman of great public spirit and patriotism had offered the sum of 10,000*l.* for founding a National Portrait Gallery, in connexion with, and under the management of, the Board, provided a similar sum were forthcoming from any other source," the Government were approached with the view of securing State assistance. The result of these negotiations is that a supplementary estimate of 10,000*l.* for the purpose has been prepared by the Treasury. The whole sum of 20,000*l.* thus provided will be reserved as a fund for the maintenance of the gallery and the purchese of pictures. As regards the location of the new gallery, a scheme has been started for the transference of the Antiquarian Museum from the rooms now occupied by the Society of Antiquaries in the Royal Institution to new and commodious premises in the addition to be built to the Museum of Science and Art. This arrangement will be of advantage to the public when inspecting the antiquarian collection, which is inconveniently crowded, and the present rooms, having been originally constructed as picture galleries for the Royal Scottish Academy, and for many years used as such, will require no alteration to fit them for a National Portrait Gallery. The picture galleries will thus be concentrated on the Mound, and the antiquaries be provided with more ample accommodation. The society, we understand, stipulate that the accommodation to be given them in the Museum of Science and Art shall be quite distinct, and not in any way subject to the powers at South Kensington. It is anticipated that at the outset there will be a considerable number of portraits available from the National Gallery, which is over-crowded, and that public bodies in possession of historical portraits may transfer them to the national collection. Judging also from previous experience it may be probable that patriotic individuals will furnish contributions either during their own lives or by bequest. That abundant materials exist for such sufficient proof exists in the present and previous loan collections in the National Gallery. It may be added that no money from the National Exchequer has ever been spent in the purchase of pictures in Scotland.

In the recollection of frequent recent casualties from fire in theatres, attention was called to the Princess's Theatre here, and the proprietor was required to make certain alterations in the interior with the view of lessening the risk from fire. Whatever precautions, however, may be taken, it is manifest that a theatre situated in the rear of a range of buildings, the only approaches to which are two long and not very wide corridors, cannot be considered safe. The lessee, who is deservedly popular, has been for some time on the look out for a site for a new theatre, and made advances to the City authorities for one on the ground recently acquired by the City opposite the University; but the ultimate appropriation of the ground in question has not yet been decided upon.

The new Lyceum Theatre is approaching completion, and will shortly be opened, with Mr. Irving and Miss Ellen Terry as the leading stars.

It was somewhat of a surprise to us, when passing along Princes-street lately, to observe that the spire of the new Free Church at West Port forms a distinctive feature in the distance, looking southward through the open space between the Castle rock and St. John's Church. The spire in question, and the church to which it is attached, have a marked individuality, and are in good keeping with the surroundings.

In Brandon-street we notice a large and ornate building, which we took to be a new school in connexion with the Heriot Trust. Upon inquiry, we ascertained that it was indeed designed by Mr. Chesser, the architect for the Trust, and who designed most of the schools belonging to that body, but the purpose of the new building was that of a printing-office. Printing and education are, of course, intimately connected.

THE MANCHESTER SHIP CANAL.

The news of the rejection of the Manchester Ship Canal Bill by the House of Lords' Committee has been received by the manufacturing interest as nothing short of a public disaster. It is true that we cannot point to a precedent for the passing of a measure at once so novel and so important in its first Parliamentary campaign. But, after a gallant struggle, first before the Standing Orders Committee of each House, then for thirty-nine days before the House of Commons Committee, and now for ten days before the Committee of the House of Lords, it cannot be doubted that the promoters are somewhat taken by surprise by being told that they had better call again another day.

It is true that the Committee had so far cut down and hedged in the provisions of the measure which they ultimately recommended to the House that what remained for the Lords to reject was but the mutilated trunk of a Bill. In any case an application to Parliament next session was required. We can only wish the promoters better luck next year. And we venture the remark that it cannot fail to add to the strength of their cause if they give more prominence to the important evidence as to the superior cheapness of transport which the foreign manufacturer now enjoys,—a point that is brought into some relief by the evidence before the Select Committee on Canals.

THE TOLHOUSE, GREAT YARMOUTH.

This building was rescued from destruction after much anxious effort, and it has now been made over by the Mayor and Corporation to trustees, who have agreed to raise funds for the repair of the building, which will be devoted to some useful public purpose. The trustees, we learn, have made themselves responsible for a considerable outlay, in the hope that public support will be rendered to them. We commend the subject to the notice of our readers, feeling that if the requisite funds are raised with but little anxiety in this case, it will be a very material encouragement to others who may be disposed to put forth efforts for the preservation of old and interesting buildings. Doubtless many a building needing outlay has been demolished because of the difficulty of getting any one to undertake the responsibility of obtaining funds for the necessary works of restoration. Besides several local gentlemen, the trustees include the Mayor and the Vicar of Great Yarmouth for the time being.

We may add that the work is in good hands, Mr. E. P. Loftus Brock and Messrs. Bottle & Olley being joint architects for the work of restoration. In their report to the Trustees, they say that "the main fabric of what was originally a detached building is fairly sound, considering that the bulk of the walling probably dates from the middle of the thirteenth century. Settlements have taken place, but three are of old date, and do not require special attention, beyond the cutting out of small decayed portions in various places." They go on to say,—"The interior of the Tolhouse-hall has (owing to the works of 1622) but little of its original appearance. It is encumbered with the poor seats and fittings of the late court, and its proportion interfered with by the gallery over the entrance. We consider that the gallery seats and fittings should be removed, the low flat ceiling taken down, and the old roof utilised by being opened out. By these works the proportion of the hall would be apparent, and good height obtained. The present Seat of State and its canopy, brought from St. Nicholas's Church, should be carefully retained, and also the whole of the mullioned windows. These latter are the works of 1622. The roof-timbers will require careful examination and repair, as well as a very considerable amount of new work." Among other works they recommend the entire removal of the modern rough-cast and cement work from the walls. This is at present in very poor and ragged condition. It covers not only the ancient rubble work, but also the dressed angles and quoins. Its removal will effect a remarkable improvement in the appearance, for the walls, which now appear modern, will resume their ancient aspect. The cost of the various works they estimate at about 1,200*l.*, and it is recommended that the works should be done by instalments as funds may admit.

COMPETITION FOR MURAL PAINTINGS AT DUSSELDORF.

In connexion with the new Hall of Art at the above city, a competition recently took place of designs for the mural ornamental painting. The merits of two competing artists, Herr Carl Gehrts and Professor J. Scheurenberg (now in Berlin) were so nearly equal that a prize of 150*l.* was awarded to each of them. This circumstance has led to a discussion in the local press as to which of the designs should be carried out. Public opinion and the feeling of artistic circles at Düsseldorf favour the work of Herr Gehrts, himself resident at that city. An address, signed by leading artists, has been sent to the Prussian Government, asking for him to be entrusted with the work in question.

FOREIGN COMPETITIONS.

The term for sending in plans for the new Polyclinic Hospital at Rome, at which foreign architects may participate, has been extended to January 11, 1884.

In the international competition for the building to be erected for the Finnish Scciety of Arts at Helsingfors, the first premium of 4,000 Finnish marks (135*l.*) has been awarded to the architect Arthur Walter, of Berlin. The second, third, and fourth premiums (40*l.*, 34*l.*, and 27*l.*) have been given to Professor Victor Schröter, of St. Petersburg; architect Axel Berg, of Copenhagen; and architect E. Langlet, of Stockholm, respectively.

THE ARTISANS' DWELLINGS ACT.

ITS COST AND VALUE.

Mr. Selway, the representative of Newington at the Metropolitan Board of Works, appears to have a very low estimate of the value of the Artisans' Dwellings Act as passed by the late Government. At a recent meeting of the Newington Vestry a letter was received from the Home Office requesting the Vestry to instruct their medical officer to make a special inspection of the parish under the Artisans' Dwellings Act, and to make a representation to the Metropolitan Board of all areas he considered unhealthy, with the view that the Metropolitan Board might be able to make provision for improvement schemes.

Mr. Selway, adverting to the objects of the Act, and to what extent it had been carried out, said it had already cost the ratepayers of the metropolis nearly a million of money, and had done no good to any one whatever except the landlords of the wretched properties. What was really wanted was that the Metropolitan Board or some other body should have power to condemn places which were absolutely uninhabitable, without buying the owners out. The Act, however, had been amended, and was not quite so bad now, but the fact remained that the new dwellings that were erected were not occupied by the class of people that had been turned out. Mr. Silvester added that the Act offered a premium to bad landlords; but Mr. Giles, on the other hand, strongly denied that the Act had done no good. The fact that wholesome sanitary dwellings had been substituted for bad ones, was of itself a benefit to the public health. He admitted, however, that the improvement had been a costly one.

THE LIEBIG MONUMENT.

This monument, erected at Munich, has the central figure in Carrara marble. It was modelled by Michael Wagmüller, and, after his death, was executed by his pupil Wilhelm Bümann. The features of the eminent man are said to be admirably reproduced. The pedestal is of light grey Milan granite, and two steps lead up to it. Two sides contain appropriate inscriptions, and on the others are marble reliefs. It is in contemplation to erect at Giessen another Liebig monument in accordance with Wagmüller's model.

THE NORTH AND EAST SUBURBAN INDUSTRIAL DWELLINGS COMPANY.

OVER-BUILDING AND REDUCED RENTS.

The above-named company, whose chief estates and houses are at Tottenham, has just held its annual meeting. The report which was presented stated that, having regard to the depressed condition of house property in the vicinity of the Metropolis, the shareholders would be prepared for the statement that the past year had not been as successful as former years. The last report drew attention to the general reduction in rents, and that reduction had continued during the past year. Since the commencement of the current year, however, the income from rents had steadily and largely increased, and the directors believed that the worst had passed. The directors recommended a dividend at the rate of 4 per cent. per annum.

The chairman said the report was not of a very satisfactory character, still he saw no reason why the shareholders should not be satisfied with it, seeing that the directors had to present it under like circumstances with those in which all building property of a similar kind was now placed. With the depressed state of house property in the vicinity of the Metropolis, the directors had done the best that they could with the property of the company. It was generally admitted that London had been overbuilt, and not merely in their own district, but all round, there was a considerable number of empty houses. He did not know whether they had been worse off than others in this respect, but it was true that the company had had for some time a number of empty dwellings, chiefly consisting of those which by a resolution passed last year the directors were instructed to build. Lately, however, they had had a very considerable increase in the number of their tenants. Their rentals averaged, during the year just closed, not much more than 85*l.* per week, but at present they had reached 115*l.* per week. The number of empty houses was something like 10 per cent. upon the whole of the company's property.

A dividend at the rate of four per cent. per annum was declared, and Mr. Wilkinson, one of the retiring directors having been re-elected, said he could corroborate what had been said by the chairman as to the general reduction in the value of house property, as he was the holder of property in Tottenham apart from the company, and he himself experienced the difficulty referred to. But on that account he was not prepared to write down the value of the property in his stock-book, inasmuch as it was not his opinion only, but that of others, that what existed now was a purely temporary state of things.

PRIDDY, NEAR WELLS, SOMERSET.

This church has just been re-opened, after complete reparation as regards the fabric, the seats, chancel-stalls, and prayer-desks being still wanting. The building is a very interesting one, probably originally of Norman foundation, as the bowl of the ancient font appears to be of that period. It was rebuilt in the fourteenth century. There is a very well preserved fifteenth-century stoup in the porch. The tower arch, of three chamfered orders, is acutely pointed, and of early fourteenth-century date. The structure had been in a most dilapidated condition, quite unfit to hold service in. The rain and wind penetrated through the defective roofs, and damp prevailed everywhere. The tower and stair-turret in the upper stage were ruinous, and the buttresses tottering. The old oak roofs to the body of the church and the tower were found to be quite decayed, and it was necessary to put new pitch-pine roofs (copies of the old ones). The chancel roof was modern and poor, and has been replaced by a handsome English oak panelled barrel ceiling, with carved bosses. The south aisle wall and the south chancel arch pier were defective, and had to be rebuilt, as also an arch between the north aisle and Chantry Chapel, and the angles of the east chancel wall. All the roofs have been re-covered with lead, re-cast from the old. The missing stone parapet to the north aisle has been supplied, and a parapet put to the chancel roof. There are new gable copings, the old saddle stones being re-used. Proper external channel courses and down-pipes have been placed everywhere, and the ground lowered. The seats were modern, except the return chancel-stalls, which, with the elegant Perpendicular screen, will be refixed after repair. The interesting Decorated stone pulpit has been repaired. The whitewash internally has been removed, and new rough stucco applied. The nave, porch, and tower have been re-paved with Keinton stone, and the same material is used for the steps. The chancel has been laid with Godwin's tiles to the architect's design. The floor under the area for seats is paved with solid wood blocks. New oak doors with floriated hinges have been executed. The glazing is of cathedral rolled glass in various patterns and tints, mixed with seconds Newcastle crown glass. A warming-apparatus on Porritt's system has been supplied. The architect has been Mr. B. Edmund Ferrey, F.S.A.; the builder, Mr. H. Hawkins, of Glastonbury.

PARLIAMENTARY JOTTINGS.

The Wellington Statue at Hyde Park Corner.—In the House of Commons on the 9th inst., Mr. Shaw-Lefevre, First Commissioner of Works, replying to Sir H. Holland, who asked a question on behalf of Mr. R. Paget, said:—The House will recollect that a few days ago I informed them that I had invited the committee who had advised the removal of the statue of the Duke of Wellington to the site in front of the Horse Guards to reconsider the question with the experience of the model which has recently been placed there. The committee have made the following report:—

"The committee appointed to consider the question of how best to deal with the statue of the late Duke of Wellington have now had the advantage of seeing a model of the colossal figure erected upon the site recommended by them in St. James's Park, opposite to the Horse Guards. This site was only selected by them under the conviction that, having regard to the huge size of the statue, and to the fact that when raised upon a suitable pedestal, it would in its present position overtop and crush all its surroundings, it was impossible to retain it in the neighbourhood of Apsley House. They felt strongly, however, that it was only on grounds of extreme urgency that it would be justifiable to separate the monument raised to the Great Duke from a spot which it had occupied for nearly forty years in the immediate vicinity of the house given to him by the nation. Reluctantly, therefore, they recommended its removal, in the hope that in the new position (for which much was to be urged on account of its association with the military achievements of the Duke, and with his high office as Commander-in-Chief of the Army), the great size of the statue would be less objectionable, and its artistic defects less glaring. That hope is not realised by the result, and the experiment made shows that there is no position in London suitable to such a colossus, or in which its faults would not be as salient as in the two localities which have been tried. The committee, therefore, strongly urge that the statue should be re-cast; the old metal being used again in the production of a new statue of suitable proportions. They recommend that this statue should be erected in the *place* opposite to Apsley House. In this way the Duke may be commemorated by a monument in the place above all others best suited to receive it."

We greatly regret that the statue is to be broken up, and consider the act uncalled for. In the course of the discussion Sir J. Eardley-Wilmot asked, Is not the right hon. gentleman aware that that horse was modelled from the celebrated Copenhagen, on the back of which the illustrious duke won many of his victories in the Peninsula, and that he also rode that horse on the occasion of the Battle of Waterloo? Mr. S. Lefevre.—Yes, I am informed that that is the case. The new statue will probably be equestrian also. Lord J. Manners.—Is the competition for the commission for making the new statue to be limited or unlimited? Mr. S. Lefevre.—Unlimited.

The Proposed Improvements in Whitehall.—In the House of Lords on Monday evening last, Lord Lamington asked whether the Government would delay the erection of any building in Parliament-street until the plan of the whole proposed improvements from Whitehall to the Houses of Parliament had been submitted to Parliament. The noble lord said that he contended for the one principle that there should be a concentration of the public offices, and he was most anxious that the Government should avoid committing the grievous error which he thought they were about to fall into. He understood, as far as he could judge, that it was now intended to take down Parliament-street; but, to his great regret, he saw that it was not intended there to concentrate the public offices, but to let the land on building leases. He ventured to point out to the Government that in doing that they would make a complete blunder. There would be space on that ground to concentrate all the departments of public offices. By doing that they would save 30,000*l.* a year, and the buildings could be erected for about 800,000*l.* Lord Thurlow, in reply, said that he was directed to say that it would be necessary to apply to Parliament for further powers before proceeding with the erection of public offices in Parliament-street, and when that application was made it would be accompanied by a complete plan of what it was proposed to build.

The House Duty.—In the House of Commons, on the 9th inst., on the motion of Mr. Alderman Lawrence, a return was ordered of the number of houses assessed to the House-duty in the year ending the 5th day of April, 1883, in each county and division of a county and borough in the United Kingdom, distinguishing the number charged as follows:—At 20*l.*, above 20*l.* and under 30*l.*, 30*l.* and under 50*l.*, 50*l.* and under 100*l.*, 100*l.* and under 150*l.*, 150*l.* and under 200*l.*, and so on, rising progressively 50*l.*; and showing also the total amount received in each county and division of a county and borough (in continuation of Parliamentary paper No. 384 of session 1872).

THE ART-UNION OF LONDON.

The pictures selected by prize-holders of the Art-Union of London are now on view at the galleries of the society, No. 112, Strand, and they will remain on view daily from ten till six until September the 1st. Although the collection is somewhat smaller than usual, in consequence of the cost of the print, it contains some very good works selected by the fortunate possessors from the exhibitions of the Royal Academy, Society of British Artists, the Grosvenor Gallery, the two Water-colour Societies, the Royal Albert Hall, and the Society of Lady Artists. The principal prize is a painting by Mr. Arthur Stocks (No. 21),—"One generation passeth away, and another generation cometh." The subject is a cottage interior; an old lady, seated in a high-backed arm-chair, with spectacles in her hand and Bible on her lap, sits meditating over the cradle of a healthy-looking baby (presumably her grandchild) who is fast asleep. The figures and the furniture are exceedingly well painted. There are several good landscapes in the collection, some of the best being those by lady artists. The print for the current year, representing a scene in the Tuileries, June 20, 1792,—Marie Antoinette and her children face to face with some of the desperados and viragos of the Revolution, is also on view. It has been well engraved by Mr. C. W. Sharpe from the admirable picture by Mr. A. Elmore, R.A.

Prizes for Turning.—The Master, Wardens, and Court of Assistants of the Worshipful Company of Turners, according to their custom, propose to give this year their silver medal, the freedom of the Company to, and (subject to the consent of the Court of Aldermen) will also obtain the freedom of the City of London for, any workman in the trade in the United Kingdom who may send in the best specimen of hand-turning in wood, ivory, or metal. A bronze medal will be given as a second prize, and certificates of merit, as well as money-prizes, will be awarded in both the wood and ivory competitions at the discretion of the judges. Among the sums placed at the disposal of the Competition Committee are 50*l.* by the Baroness Burdett-Coutts, and 35*l.* by Mr. W. L. A. B. Burdett-Coutts. The different objects must be delivered at the London Mansion House during the week ending October 20th.

PROVINCIAL NEWS.

Darlington.—The *North Star*, a halfpenny daily newspaper started two years and a half ago in the Conservative interest, appears to have been so successful as to need larger premises, which were opened on the 11th inst. From the description which has been forwarded to us the new building appears to be well planned for its special purpose. It is situated in Crown-street, and externally is of red pressed brick, with Dunhouse stone dressings, the façade being designed in the semi-Queen Anne style of architecture. The architect is Mr. G. G. Hoskins, and the following were the contractors,—Messrs. McKenzie, excavators, bricklayers, and masons; Mr. R. T. Snaith, carpenter and joiner; Messrs. G. Pattison & Sons, slaters; Mr. R. M. Ormerod, of Carlisle, plasterer; Mr. Emmerson Smith, plumber; Mr. John Law, painter; and Mr. William Liddle, ironwork.

Birmingham.—Mr. J. T. Harrison, Local Government Board Inspector, held an inquiry in Birmingham on the 7th inst., with respect to the application of the Corporation to borrow 4,500*l.* for the purchase of a site for a hospital; 16,085*l.* for a new fish-market; and 4,700*l.* for the new street from Sparkbrook to Small Heath; and several smaller sums. Evidence was given to show the necessity for these works, and the Inspector said he would report to his Board.

OLD PLASTERING.

Sir,—Whilst examining the "Manor-house," Brigstock, Northampton, for the purpose of putting a new roof, &c., I found the plastering of the rooms in the roof,—and of the ceilings below,—was laid on "reeds," obtained from Whittlesea-mere, more than 122 years since! They are secured to the joists and rafters by oak laths,—in the same direction,—and are about 1 in. deep. They are perfectly sound. I enclose you a few,—one of which I made into a pen to write this with.

I cannot obtain any more reeds to patch up the work with, so I must thicken out with other materials.

Another peculiar thing was that the roof is constructed *without* a ridge-piece; the principals and common rafters being halved and pinned together with oak pins; all the timber being of oak, even to the *very thin slating* laths. The slates are from Colley Weston, and are perishing. All the roofs about here are of a very steep pitch, and Welsh slates are commonly laid with a 2½ in. lap (Countesses). Perhaps the other ancient buildings about here are too well known to your readers to need comment. The church (opposite) I know is.

Harry T. Percival.

SUB-CONTRACTS.

Sir,—I am very much averse to wishing to intrude on your pages, or to attempt to thrust my opinion before your readers. It is only fearing that what is quite pertinent to the case may be left unsaid that I venture to say another word. [See *Builder*, pp. 31, 62, 97, 130, 199, *ante*.]

Notoriously a very wrong impression prevails respecting the profits of the sub-contractor. The statement by a clerk of works that a specialist gets 50 per cent. higher prices than most builders is very wide of the truth. "Clerk of Works" speaks very lightly of 10 per cent. as if it formed but a moiety of the profits arising from work. It is a difficult matter to bring proof as to the amount of profit derivable from any particular branch of the building trade, but competition will not allow any extravagant gains to be made. The writer, as representing several of the largest London firms, has for many years estimated for work at 5 per cent. on the cost, and in no case does he remember more than 10 per cent. being added for profit. Therefore to speak loosely of such a sum as 10 per cent., or to insinuate that if one party did not get it as a perquisite another did, is too revolting to be seriously repeated.

Domestic engineers are not only subject to competition, like builders, but they are oftentimes put to great expenses in travelling, time for arranging and developing schemes and preparing drawings and specifications, and sometimes revising and submitting them two or three times, and afterwards to be told that he would be allowed to "tender in competition," when he would find the bases of his own scheme and specification used for the works to be executed. The experience and toil of years will be displayed and allowed to be traced by the first and every comer who shows a business card, and allowed to enter into competition with those who have borne the burden and heat of the day with an equal chance of success.

A sub-contractor's as well as the contractor's work represents so much cash which he expects and ought to receive in full. If any amount is required to be deducted, as the architect thinks the builder should receive 10 per cent. or less, why not let it be stated in the specification that provision be made for the sum, so that all competitors alike may know and add it to the cost of his work?

As to the incidentals and exigencies of all work coming under the builder's contract, they are, or ought to be, provided for without looking to the sub-contractor as an element by which his gains are to be increased.

Robert Crane.

PROPOSED WATERWORKS AT BUNGAY.

A meeting was held on Friday, August 10th, to consider the above question, Mr. W. Hartcup in the chair, supported by the parochial committees appointed by the Rural Sanitary Authority under the provisions of the Public Health Act, 1875, for the parishes of Bungay St. Mary and Bungay Holy Trinity. There were also present, and invited by the committee, Mr. J. Compton Merryweather, M.I.C.E., and Mr. J. Howard, C.E., of the firm of Messrs. Howard & Baker, to discuss the water supply of the district.

The discussion resulted in an offer being made by Mr. Howard to construct the waterworks within four months, upon an entirely new and economical principle, and which has engaged the attention of Messrs. Merryweather and Howard for some considerable time. The offer was accepted by the committee.

BAD BUILDING AT HIGHGATE.

Thomas Barr, builder, was charged at the Highgate Police-court, on an adjourned summons, issued at the instance of the Metropolitan Board of Works, for using improper mortar in the construction of two houses in Lunot-street, Highgate New Town. The defendant promised to amend the work, but it was stated that he had not done so, and had filed a petition in bankruptcy.

Mr. Bovill, the District Surveyor, said the mortar used was simply garden mould, and the work could not be rectified unless the houses were pulled down.

Mr. Bodkin said he quite agreed with Mr. Bovill that the houses should be pulled down. Not only had the defendant used this bad mortar, but, after notice was served upon him, he completed them in the same bad style. A fine of 2*l.*, and 10*s.* a day from the 23rd of June would be imposed in respect of each house, and steps must be taken to prevent the houses being sold to any unsuspecting person, who would be liable to put them into a proper condition. He would also report to the Board of Works that the Magistrate thought a summons should be taken out against the Defendant to compel him to pull them down. The fines, in the aggregate, amounted to nearly 100*l.*

Books.

Electric Lighting. By Le Comte Th. du Moncel. Translated by R. Routledge. London: Routledge & Sons.

Practical Electric Lighting. By A. Bromley Holmes. London: E. & F. N. Spon.

Two small treatises on a subject of present interest, but dealing with it in different ways. The first goes pretty deeply into the phenomena of electric lighting, its history, mainly from a French point of view, and its scientific aspect, and prefaces the whole by a chapter of definitions of terms which, worse than Greek to the ordinary reader, are here clearly explained. The book is copiously illustrated, and chapters on the cost of electric lighting and its possible applications are both valuable and interesting. Why, in enumerating the European cities which have adopted the electric light for public use, the author should add, "*Even* America has made repeated attempts to reach an immediate solution of the problem," we cannot guess. America is generally first in the field of progress, and in this instance was certainly no laggard.

Mr. Holmes's book is written to explain, in language which every one may understand, the principles involved in the production of the electric light, and it entirely succeeds. The real discoverer of the electric light appears to have been Sir Humphrey Davy, who, so long ago as 1810, produced the light by means of a galvanic battery and two pieces of carbon. Since that date the progress of the science has been fitful, and it is "only within the last few years that the possibility of employing the electric light for purposes of general illumination has been seriously considered." All writers agree as to their inability to explain what electricity *is*. They can only systematise the observed phenomena, and the means by which they are rendered subservient to man's use. The least expensive form of producing the electric current is found to be in mechanical motion, and the transformation of this motion into electrical energy is dealt with in detail. Elaborate drawings of Siemens's and other electro-magnets, with their allied machinery, are liberally given. It is stated that there is scarcely any limit, but the safety of the machine, to the strength of the electric current producible by the revolution of armature coils. The peculiarities and relative values of the arc light *versus* incandescent lamps are fully discussed; but the author of this work purposely abstains from recommending any one form of light for all purposes. Each case must, however, be taken on its merits, except that for domestic uses he considers the incandescent lamps unequalled. The *storage* of electricity, upon which its general usefulness for lighting purposes mainly depends, forms one of the most interesting chapters of an interesting book.

Modern Perspective. By Wm. R. Ware. Boston: Osgood & Co. London: Trübner.

There are some subjects which cannot be learned from books, and perspective is one of them. It is a simple matter in itself, and a competent teacher could show an apt pupil in a few hours how to put into perspective the most difficult subject. It is easy to find by simple rules the true position of any given point, and if of any point, then of any number of points. But a number of points will enable us to trace a line, and thus any line and any assemblage of lines may be easily and correctly drawn in perspective. Yet for 300 years or so some of the acutest minds have been exercised on the *rationale* of the art, and have contrived to entangle it in a mesh of complexities which might drive one mad in the attempt to understand or unravel. This book is not nearly so involved as many of its kind, yet it is made up of paragraphs of which the following is a fair sample:—"The perspective of the trace of a plane, or a system of planes, is found by passing through the station point an element of the system. *The line* where *it* intersects the plane of the picture is the perspective of the trace, or horizon, of the system of planes." It is perhaps hardly fair to present this apart from the context; but it will show how abstruse a simple matter may appear when clothed in scientific or technical language. The examples of what is called "parallel perspective" show conclusively that such a method is conventional only, and entirely out of accord with nature. The author is quite right in saying that "the chimney looks very ill-drawn, and it is not easy to make it look quite right," *i.e.*, upon the principle adopted.

The atlas of plates which accompanies the text has been carefully prepared, and the subjects have been well selected. It is some relief to get rid of that old draught-board, and the marble-paved floor, and the four-way cross, and the rest of the stock illustrations found in other treatises on this bewildering art.

A short, clear, and simple treatise on perspective is still to be written.

Limestones and Marbles; their History and Uses. By S. M. Burnham. Boston: Cassins & Co. London: Trübner & Co.

This work fully justifies its somewhat comprehensive title. The author classifies and describes the principal limestones and those varieties thereof known as marbles, alabasters, &c., found throughout the whole civilised world. He gives us their geological position, their chemical constituents, and their economic uses and value with elaborate precision and completeness. His efforts have been well seconded by the chromo-lithographer, who has furnished forty-eight illustrations of polished marbles, which are of a very high degree of excellence indeed. The type, paper, and lithography are, too, the best of their several kinds. We had selected some of the plates for special mention, but we would prefer to send our readers to the book itself, which will, probably, become the standard work on the subject of which it treats.

The limestone formation is at once the oldest and the newest of all, and its presence is almost universal. The accidental admixture of iron,

copper, clay, and other minerals gives it those varied and beautiful colours which render it of inestimable value to the architect. Ireland possesses along the Galway coast "one of the largest displays of limestone in the world," a source of wealth almost neglected; and the marbles of our own island were well known and highly prized in ancient Rome. The chapter on the vast variety of marbles used in the buildings of that city,—ancient and modern,—will be of special interest to the architect. The work is enriched with tables of fossils found in calcareous strata, of the age and locality of the principal limestone ranges, of the decorative specimens exhibited at the Paris Exposition of 1878. It has a really good index, and,—with thankfulness be it said,—its bulk is *not* swollen by a batch of advertising sheets.

The chapter on Greek art, *à propos* of the Pentelic marble, is the least satisfactory, and it is not easy to see why the specimens of African marbles should find a place in the chapter on France, or the Belgian varieties in that devoted to England. We acknowledge considerable obligations to the author, illustrator, and publisher alike, and hope that their labours will meet with a generous recognition from the public.

Sussex Archæological Collections. Vol. xxxiii. Lewes: H. W. Wolff.

The architectural student into whose hands this volume may fall will be especially pleased with a paper on Seaford Church, by the late J. S. Lee, which is all that such a paper should be. The drawings by which it is illustrated are admirable; without the least attempt at picturesqueness they are clear and precise down to the minutest detail of design and construction, and carry with them an impression of entire trustworthiness. A paper on Warnham Church and neighbourhood by Mr. André is doubly interesting from its connexion with the poet Shelley, whose ancestors had here their seat, and where the poet himself long dwelt.

Mr. Nesbitt discusses in a thoughtful paper the much-vexed question of church restoration, and endeavours to find a basis of agreement between the conservative restorers on the one hand and the leave-alone-at-any-price faction on the other. The recent *fiasco* at St. Alban's is contrasted with the course followed at the most interesting church at Horsham, where the Perpendicular east window was allowed to remain in an Early English chancel rather than re-insert conjecturally the triplet which no doubt at one time occupied the same position. In the case of St. Alban's, as the writer says, "a page of its history has been torn out," and, he might have added, a false one interpolated. We would call attention to a suggestion of this writer's that architects should be remunerated for their services in restoration works by fee and not as now by commission,—the trouble undertaken by them and the skill required from them being out of all proportion to the bare expenditure of money.

There is an interesting article on Sussex Folk-lore, and many other portions of this volume will repay perusal. The series is well known and appreciated.

Girder-making and Bridge-building in Wrought Iron. By Ed. Hutchinson, M.I.M.E. London and New York: E. & F. N. Spon.

The author addresses himself exclusively to the practical side of his subject, and modestly disclaims even the possession of an opinion as to the merits of a bridge in point of design. As a practical writer he has all the necessary knowledge. He takes up the subject *ab ovo*, and details the processes by which the crude iron is converted into malleable or wrought iron; follows it through the puddling-furnace and the rolling-mills, and thence to the testing-machine. Under the head of "workmanship" he gives instructions as to drilling, punching, riveting, and the rest, and examines the principles on which the parts of a girder are proportioned so as to develope the greatest strength at the least cost.

The second part of the work deals mainly with structures which have been produced at the "Skerne Works." The interests of the Skerne Works here become perhaps a trifle too prominent. The book may be none the less trustworthy on that account, but there are those who will be apt to look upon it as an advertisement in the guise of a scientific treatise. The difficulties of bridge-building, and the skill and ingenuity they call forth, are well shown in an account of a Swedish example, the details of which are given in full, and are worth examination.

Our Iron Roads. By Fredk. S. Williams. London and Derby: Bemrose & Sons.

This book deserves a longer notice than we are able to accord it. It is a new edition of a work published thirty years ago, and now brought down to the present date. It opens with a lively sketch of "the good old coaching days," traces the iron road from its first crude inception in the middle of the seventeenth century to the completion of the first accomplished line in 1825, and thence to the close of the past year. There is hardly a subject connected either directly or indirectly with railways that is not carefully discussed. The cost of working, compensation for injuries, the State purchase of the lines, communication with the guard, the application of uniform rates, of vacuum brakes, every conceivable subject, is touched upon by the author. His pages are spiced with anecdotes well told, and pictures well drawn and engraved. We have rarely met with a more instructive or entertaining book of its kind.

VARIORUM.

"Copyright and Patents for Inventions," by R. A. Macfie, F.R.S.E. Vol. ii. Edinburgh: T. & T. Clark. This is, in fact, a plea for free trade in literature and mechanical inventions, and the moral of it is that "patents are nowadays so exploited by professionals as to hinder the lessening of the cost of production and prevent the use of desirable improvements," and thus are detrimental to the public interests. The compilation from blue-books, committees' reports, &c., in support of this view extends to 600 pages, and presents very strongly one view of an important subject.——"Text-book of Physics," by J. D. Everett, M.A. London: Blackie & Son. Second edition, brought down to 1883. A restatement in clear and perspicuous language of what is to be found in scores of similar manuals. It is handy and compact in size, clearly printed, and copiously illustrated, and will, no doubt, receive with its many rivals its due share of public patronage.——"Pumps and Pumping Machinery," by Frederick Colyer, C.E. London: E. & F. N. Spon. "Facts only are stated and no theories entered into," and "as few words as possible are used." These ought to be strong recommendations to practical men. The matter is mainly descriptive of executed pumping gear, and the whole is illustrated by twenty-three capital plates.——"Liverpool Compensations: a Text-book for Architects and Surveyors," by Joseph Henry McGovern. Liverpool: Mrs. C. B. Bean. The recent improvements in Liverpool have given rise to numerous compensation cases, some of them of a complicated nature, and this book brings together the various newspaper and other reports of the same. It further discusses the system upon which compulsory power of the local and other Acts are exercised, and the improvements of which they are susceptible, and it strongly recommends the fusion into a general Act of the multitude of regulations for the City of Liverpool which are now in operation, to the bewilderment of all who have to do with them. It is a very useful little work.

Miscellanea.

A Large Clock for Buxton Hospital.—The Duke of Devonshire has just presented a clock to the Buxton Hospital. It is fitted with all the latest improvements. It has four illuminated dials, each 6 ft. diameter, chimes the Cambridge quarters, and strikes the hours upon a 15 cwt. bell. The cost of the whole has been about 500*l*. It has been carried out by Messrs. John Smith & Sons, Midland Steam Clock Works, Queen-street, Derby.

Hove.—According to the last report of Mr. William Kebbell, M.D., Medical Officer of Health, taking the mean of the last eight years, the annual death-rate in Hove has been only 13·3 per 1,000, compared with an average of 23·1 in the chief town population of the country, and 19·0 in the villages and country districts. The zymotic death-rate during the same period has averaged only 1·6 per 1,000, against 3·36 in all England and Wales.

Somerleaze House, near Frome.—The workmen employed at this house had an outing the other day to Weymouth, for which they are indebted to the liberality of Mr. Geo. Walters, J.P., for whom the residence, now approaching completion, has been built. The residence referred to, which is somewhat unique in appearance, is pleasantly situated on the south side of the valley at Murtry, near the road leading to Mells, and contains twenty-one rooms, all of good height and well lighted. The architecture is domestic Elizabethan or Tudor in character, and was specially designed by the late Mr. C. E. Giles, of London (who was a native of Frome). The main walls are built of selected mountain limestone very carefully fitted together in snail-creep random-work, with close joints, and the dressings are of Beer freestone from Seaton, Devonshire, the main quoins being native stone finely tooled. The walls are lined inside with bricks, and the mortar used has been made from blue lias lime and ground bricks. The roof tiles and ridges, which are of a warm brown colour, are obtained from the well-known Pen-y-bont works at Ruabon. The interior woodwork of the house is of clean varnished pitch-pine throughout, with brass fittings, the locks being the patent "push and pull" manufactured by Kaye & Co., of Leeds, with oak furniture; the wood floors are stained oak and varnished. The floor of the hall is laid with encaustic tiles supplied by Maw & Co. The fire-places are fitted with dog-grates with metal and marble mantels; these and other kindred fittings have been supplied by the Coalbrookdale Co. and Messrs. Gardiner & Sons, of Bristol, and Messrs. Coomb & Son, of Frome; the splays of the fire-places are formed with encaustic hand-painted tiles made by Minton, Hollins, & Co., of Stoke-on-Trent. The windows are glazed underneath the transoms with single panes of three-eighth polished plate-glass cemented into the freestone, and above with stained glass in lead, the various patterns having been executed by Mr. E. Harwood, of Frome. The windows are all fitted with pitch-pine folding shutters inside, except the bay window of the drawing-room, which has a patent self-acting revolving shutter of pitch-pine made by Salmon, Barnes, & Co., of Ulverstone. The wrought iron entrance-gates were designed and made by Singer & Son, of Frome. The stables, coach-houses, &c., will be fitted up with Musgrave's patent divisions, mangers, &c., and pitch-pine woodwork. The whole of the works have been carried out by Mr. Joseph Bird, of Radstock. As stated above, the plans of the main building were prepared by Mr. Giles; the conservatory, entrance, gateway, and stables were built from designs by Mr. W. F. Bird, son of the contractor, who has also supplied the whole of the working details.

Technological Museum of New South Wales.—A Technological, Industrial, and Sanitary Museum was being formed in Sydney, and was about to be opened (several thousand specimens having been got together), when it was destroyed by the burning of the Garden Palace (the late International Exhibition Building) in which it was located, in September last. Fresh premises having been secured, however, active efforts are being made to form an entirely new museum. Many specimens have already been received, and further exhibits from manufacturers and others have been promised. Some of our readers may be able to co-operate with the promoters. Series of specimens illustrative of each of the stages from the raw product to a manufactured article are especially desired. Mr. J. H. Maiden is the Curator and Secretary.

Interesting Discovery in the Island of Delos.—A telegram from the Athens correspondent of the *Daily News* says that during the excavations carried on by the French school at Athens in the island of Delos, a very interesting discovery has been made. Near the Theatre of Apollo a private house has been discovered, probably of the Alexandrine period. A court surrounded by pillars and twelve rooms have thus far been revealed. The floor of the court is of beautiful mosaic, containing flowers, fishes, and other ornaments, and in the middle of the court there is a cistern full of water. The gate of the house and the street leading to it have also been dug out. As the excavations continue, an entire quarter of the ancient city may possibly be discovered.

The Eureka Concrete Company, Lim., have received instructions to pave the stables of Marlborough House with their red diamond concrete.

The London Constructive Iron and Bridge Works, Millwall.—On the 4th inst. the *employés* at these works (Messrs. Matthew T. Shaw & Co.'s) had their first annual "beanfeast" at Broxbourne, proceeding thither in well-appointed brakes. The proceedings of the day revealed a commendable harmony of feeling (based on a consciousness of mutual dependence and of identity of interests) between employers and employed. The chair was ably and genially filled by the manager, Mr. Kirstein, who was supported by several members of the staff. "A message from the firm" was read by the Chairman. It contained the following passages:—

"We may congratulate ourselves upon our success, and although we have had difficulties to contend with, yet we have overcome them, and are now in a well-developed state. If we all strive, our works will certainly be one of the best for constructive ironwork, and we desire that our workmanship may earn and maintain a good reputation. Our desire is that all men employed by us may continue in our employment, and be present upon a similar occasion next year; also, that each and all, both masters and men, may do their duty and be helpful to one another, and work with a right spirit. We trust that all men may be punctual at their work, so that the engagements as to time undertaken by the firm may be duly honoured."

The toast of "Health and Prosperity to the Firm" was enthusiastically received. Mr. Stirling congratulated the assembled company upon the success attained by the firm, and Mr. Hickman testified to the zeal and industry of the *employés*. Mr. Gibson, on behalf of the men, acknowledged the help and consideration those in the shops received from the office staff, and especially owned the help received from their esteemed manager, Mr. Kirstein. The Chairman briefly responded, and other toasts followed.

Plymouth Pier. — The work on the Plymouth pier has been proceeded with rapidly, and has already assumed large dimensions. The approach to the pier from the toll-house, which is about 350 ft. long, is already completed, a few minor details having only to be carried out. The toll-houses at the entrances are erected, and will be finished as speedily as possible. They are made of pitch-pine, with plate-glass windows, and the panels will be inlaid with Minton tiles of a very elegant pattern. Messrs. Handysides & Co., of Derby, are now executing an order for cast-iron gates and lamps, elaborately worked with the Borough Arms in large proportions, to be placed at the entrance. The approach to the pier and the ground around the toll-houses will be laid with tesselated pavement manufactured specially by Messrs. Minton. The extreme length of the pier from end to end will be 560 ft. The work is being carried out by Mr. C. E. Daniel, contractor, of Portishead, under the superintendence of Messrs. D. Dawson (resident engineer) and Drake (clerk of the works), whilst Mr. E. S. Lancaster, of Plymouth, continues to act as honorary secretary to the scheme.

Outbreak of Fever at Torpoint.—A serious outbreak of fever is reported from Torpoint, Devonport. The cases already number upwards of one hundred. At the meeting of the St. Germans Board of Guardians on the 9th inst. Mr. B. Kerswill, the Medical Officer of Health, presented a report detailing the causes of the outbreak. It is the old story,—a scanty supply of water (much of it from polluted wells), and bad drainage. Palliative measures, such as the flushing of the drains, have been adopted, and plans for an improved water-supply, prepared by Mr. Appleton, have been accepted by the Guardians, subject to the approval of the Local Government Board. The Guardians are accused of procrastination with regard to the water question, the need of an improved supply having been apparent, it is alleged, fifteen years ago.

The Pedestal for Drake's Statue.—Of the four or five tenders that were sent in for the erection of the pedestal which is to contain the statue of Sir Francis Drake on Plymouth Hoe, that of Mr. S. Roach, of Union-street, has been accepted by the committee. The pedestal will comprise three flights of steps, with a rusticated granite base, and a red Aberdeen polished granite shaft, weighing over ten tons in one block, surmounted by a granite cap to take the statue. Mr. Roach will commence the work without delay, and under favourable circumstances hopes to finish it by the end of October.

The Forth Bridge.—The report of Major-General Hutchinson, R.E., and Major Marindin, R.E., of their first quarterly inspection of the works in progress for the construction of the Forth Railway Bridge, has been issued as a Parliamentary paper, accompanied by a plan of the proposed bridge. The inspectors say:—"The engineers have furnished us with diagrams of the strains upon the piers and other parts of the bridge, showing that, according to the result of their calculations, under no possible combination of a 56 lb. wind blowing in any direction, and a rolling load of 3,400 tons to the span (*i.e.*, two tons to the foot), will the stress either in tension or compression exceed one-fourth of the ultimate resistance of the steel to be used in the construction of the bridge, viz., 30 tons per square inch in tension, and 34 tons in compression. The specifications provide for the testing of the steel being conducted in the manner prescribed by the Admiralty regulations, and the specimens of steel and the results of the tests show that the requirements of the Board of Trade, as detailed in the report dated the 8th of December, 1881, R. 11,469, have been more than complied with. In conclusion we can report that the preparations which have been made, and the machinery and plant which we are informed have been ordered, indicate that it is the intention of the engineers and the contractors to carry out the works in a manner suitable to the magnitude of the undertaking, and that, so far, these works have been completed in accordance with the authorised plans, and in a satisfactory manner." The engineers are Messrs. Baker & Fowler; and Messrs. Siemens are manufacturing the steel plates for the bridge.

An Expensive MS.—The sale of the beautiful manuscript of the "Life of Christ," with the series of splendid miniatures by Giulio Clovio, attracted a crowded audience last month to the rooms of the auctioneers, Messrs. Sotheby, to witness the contest for this rare example of the greatest miniaturist of his time. When the magnificently-bound volume was placed before the audience, Mr. Quaritch, the well-known bookseller and great connoisseur in old manuscripts and printed books, stated that there had been some difference of opinion as to the authenticity of this fine work, and that he would, therefore, ask the auctioneer whether he would guarantee it. This inquiry was answered by a negative, but also with an assurance that the manuscript would be left with confidence to the appreciation of those who were disposed to bid for it. After this, Mr. Quaritch started the biddings with 250*l*., and was met with 500*l*. from Mr. Ellis, who continued to advance, though not against Mr. Quaritch. The latter waited until Mr. Ellis bid 1,500*l*., and then advanced steadily by fifties, in the end carrying off his prize at the large sum of 2,050*l*. We believe that it was intended by the British Museum authorities to purchase this fine MS., but the sum named as a limit was 1,000*l*. This lot formed the most important item in the sale of the Towneley MSS.—*Printing Times.*

Bars to adequate Street Communications.—At the last meeting of the St. Pancras Vestry, Mr. Hoppey moved,—"That the Metropolitan Board of Works be requested in any scheme for making more direct communication between the Strand and Holborn that such communication should enter Holborn opposite Southampton-row, and that in connexion therewith the Board should consider the necessity for removing the gate in Woburn-place, by St. Pancras Church, and so make a direct thoroughfare from Euston-road and the North of London to the Strand.—Mr. Westacott strongly urged that the Woburn-place gate should come down, which would give communication direct from Hampstead to Holborn. What they wanted in St. Pancras was that when the Metropolitan Board of Works were considering the communication between Holborn and the Strand, they should consider the advantage to the public that would arise by the removal of the Woburn-place gate. No parish in London suffered as St. Pancras did through these gates. Millions had been spent in freeing bridges, and why should not the Board help to free the roads by removing the bars and gates?—The motion was passed unanimously.

The Funeral of the late Mr. R. Johns, for many years shop foreman to Messrs. Holland & Hannen, took place on Thursday, the 9th instant, at Finchley Cemetery. Upwards of 150 foremen, clerks, and workmen testified their respect by following his remains to the grave.

Nottingham Municipal Buildings.—At a meeting of the Nottingham Town Council, the subject of the proposed new municipal buildings came up for discussion. The committee recommended that of the three premiums offered for the best designs, the first and second, of 300*l*. and 200*l*. respectively, be added together and divided equally between Messrs. Verity & Hunt, of Regent-street, London, and Mr. F. H. Holden, of No. 23, John Dalton-street, Manchester, who had been bracketed for the first place by the adjudicator, Mr. Alfred Waterhouse; and the third of 100*l*. be awarded to Mr. G. Corson, of Cookridge-street, Leeds. This recommendation was adopted by the Council, and the further consideration of the matter was adjourned. In case the Council decide to proceed with the buildings, the committee advise the selection of the design of Messrs. Verity & Hunt, the carrying out of which would, it is estimated, involve a total outlay of 161,257*l*.

Burnopfield, near Newcastle-on-Tyne.—A presbytery and schools, for the Rev. J. A. Wilson, have just been erected here. The whole has been erected from the designs and under the supervision of Mr. W. H. Wilson, architect. The presbytery is built in the Gothic style, of small blocked-faced stone, with brick and cavity walls. The dressings are of freestone from the adjoining quarry. The interior woodwork is ditch-pine, varnished. The school is built in freestone, to accommodate 200 children, with class and infant rooms. The roof is of collar-beam type, ceiled at 15 ft. 6 in. from the floor. The ventilation consists of several vertical pipes taken up in the wall, and regulated by a hinged door inside, also three fresh warm-air ventilators taken through the back of the fireplace.

Improved Industrial Dwellings Company.—The half-yearly report of the Improved Industrial Dwellings Company, Limited, has been issued, from which it appears that the company now possess 32 estates in various parts of the metropolis, on which 4,144 dwellings have been erected and are in occupation, and 615 are in course of erection, making a total of 4,759 tenements. When these are completed the number of persons residing in the company's dwellings will be nearly 25,000. The expenditure on capital account has reached 814,890*l*. The usual dividend of 5 per cent. is recommended for payment, after carrying 3,000*l*. to the reserve fund for equalisation of dividends, which will then amount to 52,500*l*.

Drawing Lots.—The Bideford Town Council at their last meeting got out of a dilemma in a novel way. They received two tenders for the construction of a wall in North-street, one from the Town Surveyor and the other from a Mr. Shute. Both were exactly the same as to price, and the Council, under the circumstances, were unable to decide which ought to be accepted. They therefore resolved, not exactly to toss up for heads to win and tails to lose, but to adopt the more ancient method of drawing from a hat. Two tickets were placed in a *chapeau* belonging to one of the Councillors, and the business of drawing having been carried out with due solemnity, it was found that the lot fell to Mr. Shute.

Destruction of a Music Hall by Fire. Durland's Star Music Hall, in Upper Sans-street, Sunderland, was entirely destroyed by fire on Saturday evening. The flames broke out in the interior of the building, near the roof, above the stage. A constable who was on duty reports that the fire broke out at half-past seven o'clock, and the first efforts of himself and the proprietors were used to get the audience, which he states numbered from 1,000 to 1,300, out of the building. He and Mr. Durland urged the people to leave quietly, and they got out safely in four minutes.

At the Royal National Eisteddfod, held at Cardiff last week, in the art competitions, W. H. Wormleighton, of Cardiff, took first prize in stone-carving with a Portland stone panel of original design in modern Renaissance style; first prize in wood-carving with a box-wood figure of Moses descending from the Mount; and second prize in applied design with a *sgraffito* panel. There were twenty-two works in the three competitions. The adjudicators were Mr. L. Alma Tadema, R.A., and Mr. Frederick Wedmore.

Free Library and Art Gallery, Dudley. We may add to the notice of this building in our last (p. 201) that the clerk of works was Mr. Henry Hackett.

The Manchester Art Gallery. — The structural alterations in progress at the Royal Institution, in order to adapt the building for the purposes of the new Corporation Art Gallery, are now completed. The fundamental change is the removal of the old lecture-theatre, which occupied the centre of the building, and extended through its entire height. Formerly the floor of the theatre was raised above the level of the rest of the ground-floor. The floor-level has now been made the same as that of the other rooms of the ground-floor. At the same time, the galleries of the upper floor, which were divided into two parts by the lecture-theatre, have now been made continuous. The ground-floor rooms on either side of the lecture-theatre were formerly broken up by a number of partitions. All these have been removed, and the rooms on this floor now correspond with those on the floor above. Two fine continuous suites of rooms have thus been obtained on either floor. A large new gallery has been secured on the first floor. The *Manchester Courier* understands that it is intended to appropriate the first-floor, as in former years, to the autumn exhibition of pictures, which will be opened on the 31st of this month. The objects recently acquired as the nucleus of the permanent art collections will be displayed on the ground-floor. The structural alterations have been carried out under the direction of the City Surveyor (Mr. Allison).

New Pier and Baths at Merrion, Dublin. About midway between Sandymount Tower and the Merrion Railway Station the new promenade pier and baths have been constructed. The new bathing-place, which is situated at the end of the pier, will afford ample depth for a good swim. It is semicircular in form, the walls being built of concrete, and of a sufficient height to prevent those inside being seen either from the road or from the pier itself. A high wall divides the ladies' from the gentlemen's bath, and gives the former a sheet of water 120 ft. by 40 ft., with a depth varying from 3 ft. to 8 ft. The gentlemen's portion is the same depth and length, but is double the breadth. About sixty bathing-boxes furnish ample accommodation for dressing, and they are fitted up with towels, looking-glass, seats, &c. By a system of sluices and long pipes running out into the sea beyond the low-water line across the "Cockle Pond," the water in the baths will be continually changed. The pier itself, which is 400 ft. in length and 14 ft. in breadth, and about 12 ft. in height, is lightly, though firmly, built on iron supports standing on heavy piles sunk through the sand, which is about 3 ft. deep, into the clay beneath. The floor is made of heavy pitch-pine boards. The architect is Mr. Fred. Morley, and the contractors are Messrs. Connolly & Son, of Dominick-street, Dublin.

The Bayreuth Theatre.—The *Menestrel* of Paris states that by order of King Louis of Bavaria, several architects are making investigations as to the possibility of removing the Richard Wagner Theatre from Bayreuth, and re-erecting it at Munich.

Mr. James Kent, of Milton-street, Finsbury, has generously handed over the "fitting" and "repairing" portion of his business to Messrs. Rowe and Silvester, his late foreman and clerk.

Children's Hospital, Paddington-green. The sanitary arrangements of this new hospital have been carried out under the direction of the Sanitary Assurance Association, of 5, Argyll-place, W.

TENDERS.

For new premises, Upper-street, Islington. Mr. Herbert Winstanley, architect. Quantities by Mr. W. H. Brayshaw:—

Morter	£1,709 0 0
Roberts	1,605 0 0
Boyce	1,528 0 0
Brass	1,494 0 0
Killby & Gayford	1,411 0 0
Woodward (accepted)	1,400 0 0

For interior painting and decorating at No. 85, Cornwall-gardens, South Kensington. Mr. L. Sharp, architect:—

Scharien & Williams (accepted).

For alterations, repairs, and interior decorations at No. 1, Bevis Marks, for M. L. Levin, Esq.:—

Scharien & Williams (accepted).

For villa residence, Cromer, Norfolk, for Mr. F. Locker. Mr. John B. Pearce, architect:—

	House.	Stables.
Cornish & Gaymer	£6,833 8 0	£868 5 0
Cubitt & Son	6,718 0 0	855 0 0
Downing & Son	5,934 0 0	759 0 0
W. Chapman	5,850 0 0	740 0 0
R. Wegg (accepted)	5,836 0 0	685 0 0

For sewers and surface-water drains, for the Surbiton Improvement Commissioners. Mr. Samuel Mather, surveyor. Quantities supplied:—

	Sewers.	Surface Water.
P. G. Pound, Bow-road	£7,955 0 0	£1,783 0 0
W. J. Botterill, Cannon-st.	6,168 0 0	1,632 0 0
T. B. Hayter, Portsmouth	6,243 0 0	1,161 0 0
Neave Bros., Stratford	5,961 0 0	1,286 0 0
J. Cardus, Acton	5,360 0 0	1,328 0 0
Wilkes & Co., Devonshire-square	5,553 16 11	1,124 1 5
Cowdery & Sons, Newent	5,417 12 7	1,182 6 8
T. Adams, Hackney	4,846 0 0	1,357 0 0
E. & W. Iles, South Wimbledon	4,943 0 0	1,111 0 0
Hill Bros., High Wycombe	4,842 6 9	1,147 15 9
J. B. G. Marshall, Brighton	4,529 19 6	1,263 5 6
T. Rigby, Croydon	4,536 4 3	961 5 8
J. Dickson, St. Albans	4,600 0 0	800 0 0
G. G. Rayner, Bootle	4,250 0 0	1,005 10 0
Beadle Bros., Erith*	4,398 0 0	772 0 0

* Accepted.

For works in erecting houses in South-street, Swindon, for Mr. W. Affleck. Bricks and stones supplied free of cost to the contractor. Mr. W. Drew, architect, Swindon:—

Jackson	£825 0 0
Wiltshire	810 0 0
Stratford	800 0 0
Barrett	765 0 0
G. R. Henley, Swindon (accepted)	760 0 0

For alterations to the Workhouse at Homerton, for the Guardians of the City of London Union. Mr. George Judge, architect:—

Burman & Sons, Enfield	£10,199 0 0
G. H. Cox, Catford Hill	9,731 10 0
Spratt & Smith, Pimlico	9,236 0 0
B. N. Smith, & Son, Paddington	8,935 0 0
J. P Groome, Islington	8,400 0 0
Lucas & Son, Kensington-square	8,355 0 0
Priestley & Gurney, Camden Town	8,350 0 0
S. J. Scott, London Wall	7,997 0 0
Scharien & Williams, South Kensington	7,950 0 0
Outhwaite & Son, East Smithfield	7,930 0 0
McCormick & Sons, Canonbury	7,900 0 0
J. & H. Cocks, Mile End-road	7,890 0 0
L. H. & R. Roberts, Islington	7,880 0 0
C. F. Kearley, Kensington	7,848 0 0
J. W. Sawyer, Clapton	7,777 0 0
Kilby & Gayford, Finsbury	7,763 0 0
T. Boyce, Hackney	7,727 0 0
J. Harper, Hackney	7,642 0 0
W. Shurmur, Clapton	7,587 0 0
W. G. Larke & Son, Fore-street, E.C.	7,344 0 0
Mark Gentry, Stratford	7,250 0 0
F. Warr, Croydon	7,245 0 0
Parrish & Hawker, Mile End	7,200 0 0
J. Holland, Poplar	6,993 0 0
J. Sharman, Kingsland	6,666 0 0
F. W. Austen, St. Alban's, and Stamford Hill	6,450 0 0

For Private Street Improvements in the Township of Urmston, Contract No. 16 consisting of the sewering, &c., of Railway-road, and Contract No. 17 consisting of the sewering, forming, &c., of Chadwick-lane and Back Lorne Grove (West). Quantities supplied by the Engineer, Mr. John Price:—

Contract No. 16.

W. Pollitt, Bolton	£1,352 1 6
Snape & Sons, Eccles	1,263 15 0
S. Cowburn, Hindley	1,225 0 0
S. Holt, Miles Platting	1,222 1 2
G. Unsworth, Moss Side	1,220 4 10
J. Randall, Weaste	1,189 17 2
M. Naylor, Hulme	1,158 15 0
W. Hayes, Bolton	1,119 1 2
J. Oakes, Kearsley	1,034 14 6
E. Bird, Chorlton	1,008 0 0
W. H. Worthington, Rusholme*	982 7 0

* Accepted.

Contract No. 17.

J. Oakes, Kearsley	£474 9 6
W. H. Worthington, Rusholme	454 2 7
S. Holt, Miles Platting	445 17 0
G. Unsworth, Moss Side	429 9 8
S. Cowburn, Hindley	426 0 0
W. Pollitt, Bolton	423 6 11
J. Randall, Weaste	407 3 9
M. Naylor, Hulme	402 12 0
Snape & Sons, Eccles	393 15 6
W. Hayes, Bolton	375 12 9
E. Bird, Chorlton (accepted)	360 19 0

For alterations to No. 40, Finsbury-pavement for the "Sceptre" Life Association. Mr. James M. Cable, architect:—

F. Higgs	£1,400 0 0
G. Sharpe	1,380 0 0
Richardson Bros.	1,337 0 0
Holloway Bros.	1,286 0 0
O. Craske (accepted)	1,269 0 0

For the supply of 1,500 yards cube of broken Guernsey granite, broken to pass through a 2-inch ring:—

	Per cubic Yard.*	Per Ton.†
Nowell & Robson	18s. 0d.	17s. 0d.
Turner & Son	17s. 0d.	15s. 6d.
Mowlem & Co.	16s. 10d.	15s. 4d.
Culverhouse	15s. 4d.	13s. 11d.
Griffiths (accepted)	14s. 11d.	14s. 1d.

* Delivered and stacked in yard at rear of the offices of the Board.

† Delivered upon any roads within the District of Willesden Local Board.

For repairs and decorations to "Annandale" House, Molesey, for Mr. G. S. Stevens. Messrs. Elkington & Sons, architects:—

Holloway Bros. (accepted)	£221 0 0

Accepted for the erection and fitting of New Châlet at Goswell-road for the Châlet Company, Limited:—

J. Slater & Co. (Engineering Works).

Holloway Bros. (Foundation and Joinery Works)	£261 0 0

Accepted for erecting and fitting New "Châlet" at Bishopsgate-street, Without, for the Châlet Company, Limited:—

J. Slater & Co. (Engineering Works).

Holloway Bros. (Foundation and Joinery Work)	£284 0 0

For the erection of Camden Town Young Men's Christian Association Buildings. Mr. Alfred R. Pite, architect, 44, Bloomsbury-square. Quantities by Mr. J. Rookwood:—

Hayward & Son	£3,620 0 0
Manley	3,497 0 0
Patman & Fotheringham	3,492 0 0
Grover	3,482 0 0
Falkner	3,367 0 0
Williams & Son	3,353 0 0
Toms	3,346 0 0
Smith & Sons	3,017 0 0

For laying-in sewers, providing and fixing gully-traps, manholes, and ventilators, and making roads and footpaths, and kerbing and channelling same, on the Kingston Estate, Portsmouth, for the National Liberal Land Company, Limited, 26, Charing Cross, London. Mr. G. Pooley, surveyor. Quantities by Mr. A. H. Ford, surveyor, Portsmouth:—

W. Ward	£4,588 0 0
E. Tull	4,484 18 10
C. Light	4,155 0 0
W. P. Winter & Son	4,150 0 0
H. W. Farminer	4,150 0 0
J. Farminer	4,111 0 0
H. & W. Evans	4,090 0 0
E. Boulton	3,993 8 11
T. E. Baskett	3,911 8 10
T. C. Cooper	3,800 0 0
T. B. Hayter (accepted)	3,640 0 0

For additions to Pickhurst, Surrey, for Mr. John Ryde. Mr. J. W. Brydon, 5, Cambridge-place, architect. Quantities by Messrs. Franklin & Andrews:—

	House.	Stables.
Birch, Kingham, & Co., Farnham	£3,605	£930
Martin, Wells, & Co., Aldershott	3,512	899
R. Pink, Milford	3,340	939
C. Jarrett, Croydon	3,263	937
S. Elliott,* Newbury	3,137	830

* Amended estimate, including additional works (accepted) £4,600 0 0

For proposed warehouse, situate No. 2, Paternoster-square. Mr. R. E. Tyler, architect. Quantities by Mr. Walter Barnett, 40, Queen-street:—

Thompson & Tweed	£2,542 0 0
Holt	2,210 0 0
Jerrard	2,197 0 0
Green	2,185 0 0
Langmead & Way	2,130 0 0
Gould & Brand	2,093 0 0
Scott	2,075 0 0
Hunt & Rider	1,988 0 0
Scharien & Williams	1,978 0 0
Cadman & Bundy	1,970 0 0
Salt	1,928 0 0
Phillips	1,920 0 0
Harper	1,877 0 0
Battley	1,869 0 0
Burch & Moor (accepted)	1,817 0 0

For alterations and additions to Nos. 266, 268, and 270, Liverpool-road, N., for the executors of Sir J. B. Mansel. Mr. T. S. Archer, architect:—

White	£573 0 0
Brown	529 0 0
Picton	427 10 0
Haines (accepted)	409 10 0

For making up, metalling, and kerbing certain roads at Mitcham and Wallington, in the district of the Croydon Union Rural Sanitary Authority. Mr. R. M. Chart, surveyor:—

Harcourt-road, in the hamlet of Wallington:—

C. Fookes, New Wimbledon	£756 0 0
H. Streeter, Croydon	605 0 0
T. Free, Naphill, High Wycombe	597 0 0
W. Nicholls, Wood Green	561 0 0
Iles Bros., South Wimbledon	549 0 0
W. Langridge (accepted), Croydon	468 0 0

Aberdeen, Bath, Rock terrace, and Queeen's roads, in the parish of Mitcham:—

C. Fookes, New Wimbledon	£917 0 0
T. Free, Naphill, High Wycombe	638 0 0
H. Streeter, Croydon	621 0 0
Iles Bros., South Wimbledon	610 0 0
Johnson & Co., Merton (accepted)	585 0 0

For the erection of stables and residential chambers in Trafalgar-square, Brompton, for E. B. Ashton & Co. Mr. C. H. Thomas, architect. Quantities supplied by Messrs. Argent & Woodward:—

Higgs & Hill	£3,600 0 0
Lawrence	3,589 0 0
Green	3,575 0 0
W. H. Smith	3,479 0 0
Kearley	3,347 0 0
Brass	3,300 0 0
Bell	3,275 0 0
Stimpson & Co	3,268 0 0
Lea	3,146 0 0
Scharien & Williams	3,000 0 0

For drainage works, Silvertown, for the West Ham Local Board. Mr. Lewis Angell, C.E.:—

Mowlem & Co.	£1,105 0 0
Strachan	1,080 0 0
J. Jackson	890 0 0
J. W. & J. Neave (accepted)	869 10 0
Brightman	857 0 0

For sewer, &c., for the Abingdon Board of Guardians. Mr. George Winship, engineer, Abingdon and Westminster:—

H. Norman, Fulham	£630 10 0
G. Thatcher, Abingdon	622 10 0
Buckle & Wheeler, Abingdon	615 0 0
H. Potter, London (accepted)	610 0 0

For building eight houses Brook-green, Hammersmith, for Mr. J. Sharp. Mr. L. Sharp, Charing Cross-chambers, architect:—

J. J. Bryant, Turnham-green (accepted) £4,400 0 0

For alterations, repairs, &c., at Woburn Lodge, Upper Woburn-place, W.C., for Mr. H. H. Finsh. Mr. Alfred G. Olley, architect, No. 94, Cannon-street:—

J. B. Axford, Gray's Inn	£876 0 0
R. Perkins, Great Titchfield-street	830 0 0
S. Belham & Co., Buckingham Palace-road (accepted)	750 0 0

For Henley-in-Arden Schools, for the Wooten Wawen School Board. Mr. W. Hawley Lloyd, Colmore-row, Birmingham, architect. Quantities supplied by Mr. George Kenwrick, Unity-buildings, Temple-street, Birmingham:—

W. Sapcote & Sons	£2,645 0 0
J. Moffatt	2,642 0 0
J. Smith & Sons	2,540 0 0
J. Roberts & Sons	2,473 0 0
T. Smith	2,468 0 0
W. H. Coppage	2,452 0 0
Bernard McEvoy	2,347 16 3
C. Lloyd & Son	2,250 0 0
S. Surman & Son	2,207 10 0
Gowing & Ingram	2,123 10 0
G. Whately	2,115 0 0
Trow & Sons	2,080 0 0
F. Briley (accepted)	1,995 0 0
T. Wilkinson (withdrawn)	1,603 7 0

For new German Orphanage, for Baron Schroeder, and the committee. Mr. E. P. Loftus Brock, architect:—

Carter & Son	£2,293 0 0
Brass	2,184 0 0
Downs	1,192 0 0
Manley	1,965 0 0
Grover	1,933 0 0
Scrivener & Co.	1,864 0 0
Mattock Bros.	1,833 0 0
Brown & Roberts	1,643 0 0

For alterations and additions to Clarence Lodge, Maida Vale, for Mr. Drake. Mr. Miller, architect:—

Blythe	£1,261 0 0
Godden	1,213 0 0
Robinson	1,203 0 0
Keyes & Head	1,098 0 0
Mark	1,049 0 0
Bolding	987 0 0

For the construction of a concrete sewer for the Finchley Local Board. Mr. G. W. Brumell, surveyor:—
J. Bell, Wood Green (accepted).

For alterations and additions to house, Tonnereau-road, Ipswich, for Mr. William Pretty. Mr. William Eade, Post-office-chambers, Ipswich, architect:—

E. Catchpole (accepted)	£800 0 0

For alterations and additions to warehouse, Princes-street, Ipswich, for Messrs. R. D. and J. B. Fraser. Mr. William Eade, architect:—

E. Catchpole	£730 0 0
A. Coe	720 0 0
T. Thwaites	719 0 0
J. B. & F. Bennett	710 0 0
J. Pells & Sons	700 0 0
R. S. Smith	699 0 0
R. Girling (accepted)	698 0 0

For further alterations to same, next Friars-street:—

R. Girling (accepted)	£240 0 0

For extension of Wesleyan School Buildings, Alan-road, Ipswich. Mr. William Eade, architect:—

R. Tooley	£325 0 0
R. S. Smith	325 0 0
C. A. Wyatt	318 10 0
A. Coe	300 0 0
J. Pells & Sons (accepted)	276 14 0

For additions, 31, Barrington-road, Brixton, for Mr. T. Catling. Messrs. Muggeridge & Powell, architects:—

R. M. Priestly	£215 0 0
B. Cooke	194 0 0
J. W. Nash	175 0 0
G. & S. Fisher	159 0 0

For alterations, 22 and 24, Lower Kennington-lane, for Mr. Wayre. Messrs. Muggeridge & Powell, architects:—

J. Broome	£385 0 0
S. Dellarocca	297 0 0
J. Hoare & Son	294 0 0
J. Tyerman	287 0 0
H. Quennell	279 0 0
G. & S. Fisher	269 0 0
R. M. Priestly (accepted)	240 0 0

For repairs, &c., Gregorian Arms, Jamaica-road, Bermondsey, for Mr. Meacock. Muggeridge & Powell, architects:—

J. F. Gibson	£128 0 0
G. & S. Fisher	94 0 0
G. & T. Riddell	87 0 0
R. Whitby (accepted)	67 0 0

For painted decorations at the new Livery Hall, St. Helen's-place, for the Worshipful Company of Leathersellers. Mr. G. A. Wilson, architect, 2, East India-avenue:—
Battam & Heywood (accepted).

For erecting a new wing for out-patients, &c., to the Croydon General Hospital, West Croydon. Mr. Charles Henman, 64, Cannon-street, architect. Quantities by Mr. Charles Fitz-Roy Doll:—

	New Wing.	Additional 10 ft.
F. H. Docking, Croydon	£6,141 14 4	£280 3 0
W. Marriage, Croydon	5,775 0 0	234 12 8
Maides & Harper, Croydon	5,596 0 0	223 0 0
J. & C. Bowyer, Upper Norwood	5,575 0 0	215 0 0
J. W. Hobbs, London	5,075 0 0	194 0 0
J. Smith & Sons, South Norwood	4,973 0 0	193 0 0

For erecting a laboratory at the High School, Wellesley-road, Croydon, for the Girls' Public Day School Company (Limited). Mr. C. Henman, architect. Quantities by Mr. C. Fitz-Roy Doll:—

J. & C. Bowyer, Upper Norwood	£475 0 0
W. Marriage, Croydon	465 0 0
J. Smith & Sons, South Norwood	439 0 0
Maides & Harper, Croydon (accepted)	417 0 0

For new male vagrant ward, and other works, at the Union Workhouse, Herne. Mr. Benjamin Adkins, architect, Faversham:—

Cornelius, Whitstable	£1,259 0 0
Cozens, Canterbury	1,214 0 0
Adams, Herne Bay (accepted)	1,150 0 0

Gas Tank, Ilford.—The lowest tender for this work (see list, p. 203, last week) was submitted by Messrs. J. & H. Robus (not *Robins*, as printed), of Lower Sydenham. Messrs. Robus's tender has been accepted. We can take no blame for the misprint.

TO CORRESPONDENTS.

W. C. T. (next week).—F. N. (next week).—F. M. (our correspondent misreads the article).—G. S. (thanks, not desired).—J. B. P.—P. & Son.—G. E.—F. M.—F. C. K.—E. L. B.—J. C.—F. C. K.—J. T. B.—M. S.—G. S. & Co.—T. S. A.—Messrs. M.—R. S. T.—W. B.—S. M.—W. H. W.—R. M. C.—W. E. M.—S. & W.—G. K.—F. N.—B. A.—W. M.—Dr. S.—E. D. & Co.—H. H.—G. P.—A. S.—R. & S.—J. U. C.—J. W. & J. N.—J. P.—N. & R.—G. J.—W. D.—G. C.—D. M. H.—M. Bros.—H. W.

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All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

Note.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors

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